SEQUENCE LISTING

<110> Agensys, Inc.
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Jakobovits, Aya
Challita-Eid, Pia M.
Ge, Wangmao
Faris, Mary
Steven B. Kanner
Juan J. Perez-Villar

<120> Nucleic Acids and Corresponding Proteins
Entitled 254P1D6B Useful in Treatment and Detection of
Cancer

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Asp Trp Gly Leu Leu Pro Gly Ser Glu Gly Ala Phe Asn Ser Ser Val
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His Tyr Leu Asn Glu Ser Ala Ser Thr Pro Ala Pro Lys Leu Pro Glu
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acc ccg ggg agt aca gag cac agc atc cca aca cct ccc act agc gca   1444
Thr Pro Gly Ser Thr Glu His Ser Ile Pro Thr Pro Pro Thr Ser Ala
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gcc ccc tct gag tcc acc cca tct gag cta ccc ata tct cct acc act   1492
Ala Pro Ser Glu Ser Thr Pro Ser Glu Leu Pro Ile Ser Pro Thr Thr
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Ala Pro Arg Thr Val Lys Glu Leu Thr Val Ser Ala Gly Asp Asn Leu
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att ata act tta ccc gac aat gaa gtt gaa ctg aag gcc ttt gtt gcg   1588
Ile Ile Thr Leu Pro Asp Asn Glu Val Glu Leu Lys Ala Phe Val Ala
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cca gcg cca cct gta gaa aca acc tac aac tat gaa tgg aat tta ata   1636
Pro Ala Pro Pro Val Glu Thr Thr Tyr Asn Tyr Glu Trp Asn Leu Ile
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Ser His Pro Thr Asp Tyr Gln Gly Glu Ile Lys Gln Gly His Lys Gln
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Val Lys Pro Ala Arg Arg Val Asn Leu Pro Pro Val Ala Val Val Ser
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ccc caa ctg caa gag ctc act ttg cct ttg acg tca gcc ctc att gat   1876
Pro Gln Leu Gln Glu Leu Thr Leu Pro Leu Thr Ser Ala Leu Ile Asp
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ggc agc caa agt aca gat gat act gaa ata gtg agt tat cat tgg gaa   1924
Gly Ser Gln Ser Thr Asp Asp Thr Glu Ile Val Ser Tyr His Trp Glu
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gaa ata aac ggg ccc ttc ata gaa gag aag act tca gtt gac tct ccc   1972
Glu Ile Asn Gly Pro Phe Ile Glu Glu Lys Thr Ser Val Asp Ser Pro
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Val Leu Arg Leu Ser Asn Leu Asp Pro Gly Asn Tyr Ser Phe Arg Leu
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act gtt aca gac tcg gac gga gcc act aac tct aca act gca gcc cta   2068
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cag agc agt gac gat cac cag att gtc ctc tat gag tgg tcc ctg ggt   2212
Gln Ser Ser Asp Asp His Gln Ile Val Leu Tyr Glu Trp Ser Leu Gly
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cct ggg agt gag ggc aaa cat gtg gtc atg cag gga gta cag acg cca   2260
Pro Gly Ser Glu Gly Lys His Val Val Met Gln Gly Val Gln Thr Pro
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Tyr Leu His Leu Ser Ala Met Gln Glu Gly Asp Tyr Thr Phe Gln Leu
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aag gtg aca gat tct tca agg caa cag tct act gct gtr gtg act gtg   2356
Lys Val Thr Asp Ser Ser Arg Gln Gln Ser Thr Ala Xaa Val Thr Val
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Ile Val Gln Pro Glu Asn Asn Arg Pro Pro Val Ala Val Ala Gly Pro
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Asp Lys Glu Leu Ile Phe Pro Val Glu Ser Ala Thr Leu Asp Gly Ser
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agc agc agc gat gac cac ggc att gtc ttc tac cac tgg gag cac gtc   2500
Ser Ser Ser Asp Asp His Gly Ile Val Phe Tyr His Trp Glu His Val
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aga ggc ccc agt gca gtg gag atg gaa aat att gac aaa gca ata gcc   2548
Arg Gly Pro Ser Ala Val Glu Met Glu Asn Ile Asp Lys Ala Ile Ala
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aaa gac cag cag gga ctg agc agc acg tcc acc ctc act gtg gct gtg   2644
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aag aag gaa aat aat agt cct ccc aga gcc cgg gct ggt ggc aga cat   2692
Lys Lys Glu Asn Asn Ser Pro Pro Arg Ala Arg Ala Gly Gly Arg His
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gtt ctt gtg ctt ccc aat aat tcc att act ttg gat ggt tca agg tct   2740
Val Leu Val Leu Pro Asn Asn Ser Ile Thr Leu Asp Gly Ser Arg Ser
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act gat gac caa aga att gtg tcc tat ctg tgg atc cgg gat ggc cag   2788
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agt cca gca gct gga gat gtc atc gat ggc tct gac cac agt gtg gct   2836
Ser Pro Ala Ala Gly Asp Val Ile Asp Gly Ser Asp His Ser Val Ala
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Val Gln Pro Asp Pro Arg Lys Ser Gly Leu Val Glu Leu Thr Leu Gln
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gtt ggt gtt ggg cag ctg aca gag cag cgg aag gac acc ctt gtg agg   3028
Val Gly Val Gly Gln Leu Thr Glu Gln Arg Lys Asp Thr Leu Val Arg
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cag ctg gct gtg ctg ctg aac gtg ctg gac tcg gac att aag gtc cag   3076
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aag att cgg gcc cac tcg gat ctc agc acc gtg att gtg ttt tat gta   3124
Lys Ile Arg Ala His Ser Asp Leu Ser Thr Val Ile Val Phe Tyr Val
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cag agc agg ccg cct ttc aag gtt ctc aaa gct gct gaa gtg gcc cga   3172
Gln Ser Arg Pro Pro Phe Lys Val Leu Lys Ala Ala Glu Val Ala Arg
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cat ggt cac tgc gac ccc ctc aca aag cgc tgc att tgc tct cac tta   3316
His Gly His Cys Asp Pro Leu Thr Lys Arg Cys Ile Cys Ser His Leu
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caa aaa agg act aaa atc agg aaa aaa aca aag tac acc atc ctg gat   3508
Gln Lys Arg Thr Lys Ile Arg Lys Lys Thr Lys Tyr Thr Ile Leu Asp
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Ser Ser Cys Asp Leu Ala Trp Trp Phe Glu Gly Arg Cys Tyr Leu Val
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Ser Cys Pro His Lys Glu Asn Cys Glu Pro Lys Lys Met Gly Pro Ile
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Arg Ser Tyr Leu Thr Phe Val Leu Arg Pro Val Gln Arg Pro Ala Gln
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Leu Leu Asp Tyr Gly Asp Met Met Leu Asn Arg Gly Ser Pro Ser Gly
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Ile Trp Gly Asp Ser Pro Glu Asp Ile Arg Lys Asp Leu Xaa Phe Leu
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Arg Glu Leu Glu Lys Asp Leu Leu Gln Pro Ser Gly Lys Gln Glu Pro
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Arg Gly Ser Ala Glu Tyr Thr Asp Trp Gly Leu Leu Pro Gly Ser Glu
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His Ser Leu Pro Pro Ala Ser Leu Glu Leu Ser Ser Val Thr Val Glu
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Lys Ser Pro Val Leu Thr Val Thr Pro Gly Ser Thr Glu His Ser Ile
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Pro Thr Pro Pro Thr Ser Ala Ala Pro Ser Glu Ser Thr Pro Ser Glu
305                 310                 315                 320
Leu Pro Ile Ser Pro Thr Thr Ala Pro Arg Thr Val Lys Glu Leu Thr
                325                 330                 335
Val Ser Ala Gly Asp Asn Leu Ile Ile Thr Leu Pro Asp Asn Glu Val
            340                 345                 350
Glu Leu Lys Ala Phe Val Ala Pro Ala Pro Pro Val Glu Thr Thr Tyr
        355                 360                 365
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Asn Tyr Glu Trp Asn Leu Ile Ser His Pro Thr Asp Tyr Gln Gly Glu
    370                 375                 380
Ile Lys Gln Gly His Lys Gln Thr Leu Asn Leu Ser Gln Leu Ser Val
385                 390                 395                 400
Gly Leu Tyr Val Phe Lys Val Thr Val Ser Ser Glu Asn Ala Phe Gly
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Glu Gly Phe Val Asn Val Thr Val Lys Pro Ala Arg Arg Val Asn Leu
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Pro Pro Val Ala Val Val Ser Pro Gln Leu Gln Glu Leu Thr Leu Pro
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Leu Thr Ser Ala Leu Ile Asp Gly Ser Gln Ser Thr Asp Asp Thr Glu
    450                 455                 460
Ile Val Ser Tyr His Trp Glu Glu Ile Asn Gly Pro Phe Ile Glu Glu
465                 470                 475                 480
Lys Thr Ser Val Asp Ser Pro Val Leu Arg Leu Ser Asn Leu Asp Pro
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Gly Asn Tyr Ser Phe Arg Leu Thr Val Thr Asp Ser Asp Gly Ala Thr
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Asn Ser Thr Thr Ala Ala Leu Ile Val Asn Asn Ala Val Asp Tyr Pro
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Pro Val Ala Asn Ala Gly Pro Asn His Thr Ile Thr Leu Pro Gln Asn
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Ser Ile Thr Leu Asn Gly Asn Gln Ser Ser Asp Asp His Gln Ile Val
545                 550                 555                 560
Leu Tyr Glu Trp Ser Leu Gly Pro Gly Ser Glu Gly Lys His Val Val
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Met Gln Gly Val Gln Thr Pro Tyr Leu His Leu Ser Ala Met Gln Glu
            580                 585                 590
Gly Asp Tyr Thr Phe Gln Leu Lys Val Thr Asp Ser Ser Arg Gln Gln
        595                 600                 605
Ser Thr Ala Xaa Val Thr Val Ile Val Gln Pro Glu Asn Asn Arg Pro
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Pro Val Ala Val Ala Gly Pro Asp Lys Glu Leu Ile Phe Pro Val Glu
625                 630                 635                 640
Ser Ala Thr Leu Asp Gly Ser Ser Ser Ser Asp Asp His Gly Ile Val
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Phe Tyr His Trp Glu His Val Arg Gly Pro Ser Ala Val Glu Met Glu
            660                 665                 670
Asn Ile Asp Lys Ala Ile Ala Thr Val Thr Gly Leu Gln Val Gly Thr
        675                 680                 685
Tyr His Phe Arg Leu Thr Val Lys Asp Gln Gln Gly Leu Ser Ser Thr
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Ser Thr Leu Thr Val Ala Val Lys Lys Glu Asn Asn Ser Pro Pro Arg
705                 710                 715                 720
Ala Arg Ala Gly Gly Arg His Val Leu Val Leu Pro Asn Asn Ser Ile
                725                 730                 735
Thr Leu Asp Gly Ser Arg Ser Thr Asp Asp Gln Arg Ile Val Ser Tyr
            740                 745                 750
Leu Trp Ile Arg Asp Gly Gln Ser Pro Ala Ala Gly Asp Val Ile Asp
        755                 760                 765
Gly Ser Asp His Ser Val Ala Leu Gln Leu Thr Asn Leu Val Glu Gly
    770                 775                 780
Val Tyr Thr Phe His Leu Arg Val Thr Asp Ser Gln Gly Ala Ser Asp
785                 790                 795                 800
Thr Asp Thr Ala Thr Val Glu Val Gln Pro Asp Pro Arg Lys Ser Gly
                805                 810                 815
Leu Val Glu Leu Thr Leu Gln Val Gly Val Gly Gln Leu Thr Glu Gln
            820                 825                 830
Arg Lys Asp Thr Leu Val Arg Gln Leu Ala Val Leu Leu Asn Val Leu
        835                 840                 845
Asp Ser Asp Ile Lys Val Gln Lys Ile Arg Ala His Ser Asp Leu Ser
    850                 855                 860
Thr Val Ile Val Phe Tyr Val Gln Ser Arg Pro Pro Phe Lys Val Leu
865                 870                 875                 880
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Lys Ala Ala Glu Val Ala Arg Asn Leu His Met Arg Leu Ser Lys Glu
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Lys Ala Asp Phe Leu Leu Phe Lys Val Leu Arg Val Asp Thr Ala Gly
            900                 905                 910
Cys Leu Leu Lys Cys Ser Gly His Gly His Cys Asp Pro Leu Thr Lys
        915                 920                 925
Arg Cys Ile Cys Ser His Leu Trp Met Glu Asn Leu Ile Gln Arg Tyr
    930                 935                 940
Ile Trp Asp Gly Glu Ser Asn Cys Glu Trp Ser Ile Phe Tyr Val Thr
945                 950                 955                 960
Val Leu Ala Phe Thr Leu Ile Val Leu Thr Gly Gly Phe Thr Trp Leu
                965                 970                 975
Cys Ile Cys Cys Cys Lys Arg Gln Lys Arg Thr Lys Ile Arg Lys Lys
            980                 985                 990
Thr Lys Tyr Thr Ile Leu Asp Asn Met Asp Glu Gln Glu Arg Met Glu
        995                 1000                1005
Leu Arg Pro Lys Tyr Gly Ile Lys His Arg Ser Thr Glu His Asn Ser
    1010                1015                1020
Ser Leu Met Val Ser Glu Ser Glu Phe Asp Ser Asp Gln Asp Thr Ile
1025                1030                1035                1040
Phe Ser Arg Glu Lys Met Glu Arg Gly Asn Pro Lys Val Ser Met Asn
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                                  Met Ala Pro Pro Thr Gly Val
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ctc tct tca ttg ctg ctg ctg gtg aca att gca ggt tgt gcc cgt aag   580
Leu Ser Ser Leu Leu Leu Leu Val Thr Ile Ala Gly Cys Ala Arg Lys
         10                  15                  20

cag tgc agc gag ggg agg aca tat tcc aat gca gtc att tca cct aac   628
Gln Cys Ser Glu Gly Arg Thr Tyr Ser Asn Ala Val Ile Ser Pro Asn
     25                  30                  35

ttg gaa acc acc aga atc atg cgg gtg tct cac acc ttc cct gtc gta   676
Leu Glu Thr Thr Arg Ile Met Arg Val Ser His Thr Phe Pro Val Val
 40                  45                  50                  55

gac tgc acg gcc gct tgc tgt gac ctg tcc agc tgt gac ctg gcc tgg   724
Asp Cys Thr Ala Ala Cys Cys Asp Leu Ser Ser Cys Asp Leu Ala Trp
                 60                  65                  70
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tgg ttc gag ggc cgc tgc tac ctg gtg agc tgc ccc cac aaa gag aac   772
Trp Phe Glu Gly Arg Cys Tyr Leu Val Ser Cys Pro His Lys Glu Asn
             75                  80                  85

tgt gag ccc aag aag atg ggc ccc atc agg tct tat ctc act ttt gtg   820
Cys Glu Pro Lys Lys Met Gly Pro Ile Arg Ser Tyr Leu Thr Phe Val
         90                  95                 100

ctc cgg cct gtt cag agg cct gca cag ctg ctg gac tat ggg gac atg   868
Leu Arg Pro Val Gln Arg Pro Ala Gln Leu Leu Asp Tyr Gly Asp Met
    105                 110                 115

atg ctg aac agg ggc tcc ccc tcg ggg atc tgg ggg gac tca cct gag   916
Met Leu Asn Arg Gly Ser Pro Ser Gly Ile Trp Gly Asp Ser Pro Glu
120                 125                 130                 135

gat atc aga aag gac ttg ccc ttt cta ggc aaa gat tgg ggc cta gag   964
Asp Ile Arg Lys Asp Leu Pro Phe Leu Gly Lys Asp Trp Gly Leu Glu
                140                 145                 150

gag atg tct gag tac gca gat gac tac cgg gag ctg gag aag gac ctc   1012
Glu Met Ser Glu Tyr Ala Asp Asp Tyr Arg Glu Leu Glu Lys Asp Leu
            155                 160                 165

ttg caa ccc agt ggc aag cag gag ccc aga ggg agt gcc gag tac acg   1060
Leu Gln Pro Ser Gly Lys Gln Glu Pro Arg Gly Ser Ala Glu Tyr Thr
        170                 175                 180

gac tgg ggc cta ctg ccg ggc agc gag ggg gcc ttc aac tcc tct gtt   1108
Asp Trp Gly Leu Leu Pro Gly Ser Glu Gly Ala Phe Asn Ser Ser Val
    185                 190                 195

gga gac agt cct gcg gtg cca gcg gag acg cag cag gac cct gag ctc   1156
Gly Asp Ser Pro Ala Val Pro Ala Glu Thr Gln Gln Asp Pro Glu Leu
200                 205                 210                 215

cat tac ctg aat gag tcg gct tca acc cct gcc cca aaa ctc cct gag   1204
His Tyr Leu Asn Glu Ser Ala Ser Thr Pro Ala Pro Lys Leu Pro Glu
                220                 225                 230

aga agt gtg ttg ctt ccc ttg ccg act act cca tct tca gga gag gtg   1252
Arg Ser Val Leu Leu Pro Leu Pro Thr Thr Pro Ser Ser Gly Glu Val
            235                 240                 245

ttg gag aaa gaa aag gct tct cag ctc cag gaa caa tcc agc aac agc   1300
Leu Glu Lys Glu Lys Ala Ser Gln Leu Gln Glu Gln Ser Ser Asn Ser
        250                 255                 260

tct gga aaa gag gtt cta atg cct tcc cat agt ctt cct ccg gca agc   1348
Ser Gly Lys Glu Val Leu Met Pro Ser His Ser Leu Pro Pro Ala Ser
    265                 270                 275

ctg gag ctc agc tca gtc acc gtg gag aaa agc cca gtg ctc aca gtc   1396
Leu Glu Leu Ser Ser Val Thr Val Glu Lys Ser Pro Val Leu Thr Val
280                 285                 290                 295

acc ccg ggg agt aca gag cac agc atc cca aca cct ccc act agc gca   1444
Thr Pro Gly Ser Thr Glu His Ser Ile Pro Thr Pro Pro Thr Ser Ala
                300                 305                 310

gcc ccc tct gag tcc acc cca tct gag cta ccc ata tct cct acc act   1492
Ala Pro Ser Glu Ser Thr Pro Ser Glu Leu Pro Ile Ser Pro Thr Thr
            315                 320                 325
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gct ccc agg aca gtg aaa gaa ctt acg gta tcg gct gga gat aac cta   1540
Ala Pro Arg Thr Val Lys Glu Leu Thr Val Ser Ala Gly Asp Asn Leu
        330                 335                 340

att ata act tta ccc gac aat gaa gtt gaa ctg aag gcc ttt gtt gcg   1588
Ile Ile Thr Leu Pro Asp Asn Glu Val Glu Leu Lys Ala Phe Val Ala
    345                 350                 355

cca gcg cca cct gta gaa aca acc tac aac tat gaa tgg aat tta ata   1636
Pro Ala Pro Pro Val Glu Thr Thr Tyr Asn Tyr Glu Trp Asn Leu Ile
360                 365                 370                 375

agc cac ccc aca gac tac caa ggt gaa ata aaa caa gga cac aag caa   1684
Ser His Pro Thr Asp Tyr Gln Gly Glu Ile Lys Gln Gly His Lys Gln
                380                 385                 390

act ctt aac ctc tct caa ttg tcc gtc gga ctt tat gtc ttc aaa gtc   1732
Thr Leu Asn Leu Ser Gln Leu Ser Val Gly Leu Tyr Val Phe Lys Val
            395                 400                 405

act gtt tct agt gaa aac gcc ttt gga gaa gga ttt gtc aat gtc act   1780
Thr Val Ser Ser Glu Asn Ala Phe Gly Glu Gly Phe Val Asn Val Thr
        410                 415                 420

gtt aag cct gcc aga aga gtc aac ctg cca cct gta gca gtt gtt tct   1828
Val Lys Pro Ala Arg Arg Val Asn Leu Pro Pro Val Ala Val Val Ser
    425                 430                 435

ccc caa ctg caa gag ctc act ttg cct ttg acg tca gcc ctc att gat   1876
Pro Gln Leu Gln Glu Leu Thr Leu Pro Leu Thr Ser Ala Leu Ile Asp
440                 445                 450                 455

ggc agc caa agt aca gat gat act gaa ata gtg agt tat cat tgg gaa   1924
Gly Ser Gln Ser Thr Asp Asp Thr Glu Ile Val Ser Tyr His Trp Glu
                460                 465                 470

gaa ata aac ggg ccc ttc ata gaa gag aag act tca gtt gac tct ccc   1972
Glu Ile Asn Gly Pro Phe Ile Glu Glu Lys Thr Ser Val Asp Ser Pro
            475                 480                 485

gtc tta cgc ttg tct aac ctt gat cct ggt aac tat agt ttc agg ttg   2020
Val Leu Arg Leu Ser Asn Leu Asp Pro Gly Asn Tyr Ser Phe Arg Leu
        490                 495                 500

act gtt aca gac tcg gac gga gcc act aac tct aca act gca gcc cta   2068
Thr Val Thr Asp Ser Asp Gly Ala Thr Asn Ser Thr Thr Ala Ala Leu
    505                 510                 515

ata gtg aac aat gct gtg gac tac cca cca gtt gct aat gca gga cca   2116
Ile Val Asn Asn Ala Val Asp Tyr Pro Pro Val Ala Asn Ala Gly Pro
520                 525                 530                 535

aat cac acc ata act ttg ccc caa aac tcc atc act ttg aat gga aac   2164
Asn His Thr Ile Thr Leu Pro Gln Asn Ser Ile Thr Leu Asn Gly Asn
                540                 545                 550

cag agc agt gac gat cac cag att gtc ctc tat gag tgg tcc ctg ggt   2212
Gln Ser Ser Asp Asp His Gln Ile Val Leu Tyr Glu Trp Ser Leu Gly
            555                 560                 565

cct ggg agt gag ggc aaa cat gtg gtc atg cag gga gta cag acg cca   2260
Pro Gly Ser Glu Gly Lys His Val Val Met Gln Gly Val Gln Thr Pro
        570                 575                 580
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tac ctt cat tta tct gca atg cag gaa gga gat tat aca ttt cag ctg   2308
Tyr Leu His Leu Ser Ala Met Gln Glu Gly Asp Tyr Thr Phe Gln Leu
    585                 590                 595

aag gtg aca gat tct tca agg caa cag tct act gct gta gtg act gtg   2356
Lys Val Thr Asp Ser Ser Arg Gln Gln Ser Thr Ala Val Val Thr Val
600                 605                 610                 615

att gtc cag cct gaa aac aat aga cct cca gtg gct gtg gcc ggc cct   2404
Ile Val Gln Pro Glu Asn Asn Arg Pro Pro Val Ala Val Ala Gly Pro
                620                 625                 630

gat aaa gag ctg atc ttc cca gtg gaa agt gct acc ctg gat ggg agc   2452
Asp Lys Glu Leu Ile Phe Pro Val Glu Ser Ala Thr Leu Asp Gly Ser
            635                 640                 645

agc agc agc gat gac cac ggc att gtc ttc tac cac tgg gag cac gtc   2500
Ser Ser Ser Asp Asp His Gly Ile Val Phe Tyr His Trp Glu His Val
        650                 655                 660

aga ggc ccc agt gca gtg gag atg gaa aat att gac aaa gca ata gcc   2548
Arg Gly Pro Ser Ala Val Glu Met Glu Asn Ile Asp Lys Ala Ile Ala
    665                 670                 675

act gtg act ggt ctc cag gtg ggg acc tac cac ttc cgt ttg aca gtg   2596
Thr Val Thr Gly Leu Gln Val Gly Thr Tyr His Phe Arg Leu Thr Val
680                 685                 690                 695

aaa gac cag cag gga ctg agc agc acg tcc acc ctc act gtg gct gtg   2644
Lys Asp Gln Gln Gly Leu Ser Ser Thr Ser Thr Leu Thr Val Ala Val
                700                 705                 710

aag aag gaa aat aat agt cct ccc aga gcc cgg gct ggt ggc aga cat   2692
Lys Lys Glu Asn Asn Ser Pro Pro Arg Ala Arg Ala Gly Gly Arg His
            715                 720                 725

gtt ctt gtg ctt ccc aat aat tcc att act ttg gat ggt tca agg tct   2740
Val Leu Val Leu Pro Asn Asn Ser Ile Thr Leu Asp Gly Ser Arg Ser
        730                 735                 740

act gat gac caa aga att gtg tcc tat ctg tgg atc cgg gat ggc cag   2788
Thr Asp Asp Gln Arg Ile Val Ser Tyr Leu Trp Ile Arg Asp Gly Gln
    745                 750                 755

agt cca gca gct gga gat gtc atc gat ggc tct gac cac agt gtg gct   2836
Ser Pro Ala Ala Gly Asp Val Ile Asp Gly Ser Asp His Ser Val Ala
760                 765                 770                 775

ctg cag ctt acg aat ctg gtg gag ggg gtg tac act ttc cac ttg cga   2884
Leu Gln Leu Thr Asn Leu Val Glu Gly Val Tyr Thr Phe His Leu Arg
                780                 785                 790

gtc acc gac agt cag ggg gcc tcg gac aca gac act gcc act gtg gaa   2932
Val Thr Asp Ser Gln Gly Ala Ser Asp Thr Asp Thr Ala Thr Val Glu
            795                 800                 805

gtg cag cca gac cct agg aag agt ggc ctg gtg gag ctg acc ctg cag   2980
Val Gln Pro Asp Pro Arg Lys Ser Gly Leu Val Glu Leu Thr Leu Gln
        810                 815                 820

gtt ggt gtt ggg cag ctg aca gag cag cgg aag gac acc ctt gtg agg   3028
Val Gly Val Gly Gln Leu Thr Glu Gln Arg Lys Asp Thr Leu Val Arg
    825                 830                 835
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cag ctg gct gtg ctg ctg aac gtg ctg gac tcg gac att aag gtc cag   3076
Gln Leu Ala Val Leu Leu Asn Val Leu Asp Ser Asp Ile Lys Val Gln
840                 845                 850                 855

aag att cgg gcc cac tcg gat ctc agc acc gtg att gtg ttt tat gta   3124
Lys Ile Arg Ala His Ser Asp Leu Ser Thr Val Ile Val Phe Tyr Val
                860                 865                 870

cag agc agg ccg cct ttc aag gtt ctc aaa gct gct gaa gtg gcc cga   3172
Gln Ser Arg Pro Pro Phe Lys Val Leu Lys Ala Ala Glu Val Ala Arg
            875                 880                 885

aat ctg cac atg cgg ctc tca aag gag aag gct gac ttc ttg ctt ttc   3220
Asn Leu His Met Arg Leu Ser Lys Glu Lys Ala Asp Phe Leu Leu Phe
        890                 895                 900

aag gtc ttg agg gtt gat aca gca ggt tgc ctt ctg aag tgt tct ggc   3268
Lys Val Leu Arg Val Asp Thr Ala Gly Cys Leu Leu Lys Cys Ser Gly
    905                 910                 915

cat ggt cac tgc gac ccc ctc aca aag cgc tgc att tgc tct cac tta   3316
His Gly His Cys Asp Pro Leu Thr Lys Arg Cys Ile Cys Ser His Leu
920                 925                 930                 935

tgg atg gag aac ctt ata cag cgt tat atc tgg gat gga gag agc aac   3364
Trp Met Glu Asn Leu Ile Gln Arg Tyr Ile Trp Asp Gly Glu Ser Asn
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tgt gag tgg agt ata ttc tat gtg aca gtg ttg gct ttt act ctt att   3412
Cys Glu Trp Ser Ile Phe Tyr Val Thr Val Leu Ala Phe Thr Leu Ile
            955                 960                 965

gtg cta aca gga ggt ttc act tgg ctt tgc atc tgc tgc tgc aaa aga   3460
Val Leu Thr Gly Gly Phe Thr Trp Leu Cys Ile Cys Cys Cys Lys Arg
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caa aaa agg act aaa atc agg aaa aaa aca aag tac acc atc ctg gat   3508
Gln Lys Arg Thr Lys Ile Arg Lys Lys Thr Lys Tyr Thr Ile Leu Asp
    985                 990                 995

aac atg gat gaa cag gaa aga atg gaa ctg agg ccc aaa tat ggt atc   3556
Asn Met Asp Glu Gln Glu Arg Met Glu Leu Arg Pro Lys Tyr Gly Ile
1000                1005                1010                1015

aag cac cga agc aca gag cac aac tcc agc ctg atg gta tcc gag tct   3604
Lys His Arg Ser Thr Glu His Asn Ser Ser Leu Met Val Ser Glu Ser
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gag ttt gac agt gac cag gac aca atc ttc agc cga gaa aag atg gag   3652
Glu Phe Asp Ser Asp Gln Asp Thr Ile Phe Ser Arg Glu Lys Met Glu
            1035                1040                1045

aga ggg aat cca aag gtt tcc atg aat ggt tcc atc aga aat gga gct   3700
Arg Gly Asn Pro Lys Val Ser Met Asn Gly Ser Ile Arg Asn Gly Ala
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Ser Phe Ser Tyr Cys Ser Lys Asp Arg  *
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<400> 5

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Ile Ala Gly Cys Ala Arg Lys Gln Cys Ser Glu Gly Arg Thr Tyr Ser
            20                  25                  30
Asn Ala Val Ile Ser Pro Asn Leu Glu Thr Thr Arg Ile Met Arg Val
        35                  40                  45
Ser His Thr Phe Pro Val Val Asp Cys Thr Ala Ala Cys Cys Asp Leu
    50                  55                  60
Ser Ser Cys Asp Leu Ala Trp Trp Phe Glu Gly Arg Cys Tyr Leu Val
65                  70                  75                  80
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Ser Cys Pro His Lys Glu Asn Cys Glu Pro Lys Lys Met Gly Pro Ile
                85                  90                  95
Arg Ser Tyr Leu Thr Phe Val Leu Arg Pro Val Gln Arg Pro Ala Gln
            100                 105                 110
Leu Leu Asp Tyr Gly Asp Met Met Leu Asn Arg Gly Ser Pro Ser Gly
        115                 120                 125
Ile Trp Gly Asp Ser Pro Glu Asp Ile Arg Lys Asp Leu Pro Phe Leu
    130                 135                 140
Gly Lys Asp Trp Gly Leu Glu Glu Met Ser Glu Tyr Ala Asp Asp Tyr
145                 150                 155                 160
Arg Glu Leu Glu Lys Asp Leu Leu Gln Pro Ser Gly Lys Gln Glu Pro
                165                 170                 175
Arg Gly Ser Ala Glu Tyr Thr Asp Trp Gly Leu Leu Pro Gly Ser Glu
            180                 185                 190
Gly Ala Phe Asn Ser Ser Val Gly Asp Ser Pro Ala Val Pro Ala Glu
        195                 200                 205
Thr Gln Gln Asp Pro Glu Leu His Tyr Leu Asn Glu Ser Ala Ser Thr
    210                 215                 220
Pro Ala Pro Lys Leu Pro Glu Arg Ser Val Leu Leu Pro Leu Pro Thr
225                 230                 235                 240
Thr Pro Ser Ser Gly Glu Val Leu Glu Lys Glu Lys Ala Ser Gln Leu
                245                 250                 255
Gln Glu Gln Ser Ser Asn Ser Ser Gly Lys Glu Val Leu Met Pro Ser
            260                 265                 270
His Ser Leu Pro Pro Ala Ser Leu Glu Leu Ser Ser Val Thr Val Glu
        275                 280                 285
Lys Ser Pro Val Leu Thr Val Thr Pro Gly Ser Thr Glu His Ser Ile
    290                 295                 300
Pro Thr Pro Pro Thr Ser Ala Ala Pro Ser Glu Ser Thr Pro Ser Glu
305                 310                 315                 320
Leu Pro Ile Ser Pro Thr Thr Ala Pro Arg Thr Val Lys Glu Leu Thr
                325                 330                 335
Val Ser Ala Gly Asp Asn Leu Ile Ile Thr Leu Pro Asp Asn Glu Val
            340                 345                 350
Glu Leu Lys Ala Phe Val Ala Pro Ala Pro Pro Val Glu Thr Thr Tyr
        355                 360                 365
Asn Tyr Glu Trp Asn Leu Ile Ser His Pro Thr Asp Tyr Gln Gly Glu
    370                 375                 380
Ile Lys Gln Gly His Lys Gln Thr Leu Asn Leu Ser Gln Leu Ser Val
385                 390                 395                 400
Gly Leu Tyr Val Phe Lys Val Thr Val Ser Ser Glu Asn Ala Phe Gly
                405                 410                 415
Glu Gly Phe Val Asn Val Thr Val Lys Pro Ala Arg Arg Val Asn Leu
            420                 425                 430
Pro Pro Val Ala Val Val Ser Pro Gln Leu Gln Glu Leu Thr Leu Pro
        435                 440                 445
Leu Thr Ser Ala Leu Ile Asp Gly Ser Gln Ser Thr Asp Asp Thr Glu
    450                 455                 460
Ile Val Ser Tyr His Trp Glu Glu Ile Asn Gly Pro Phe Ile Glu Glu
465                 470                 475                 480
Lys Thr Ser Val Asp Ser Pro Val Leu Arg Leu Ser Asn Leu Asp Pro
                485                 490                 495
Gly Asn Tyr Ser Phe Arg Leu Thr Val Thr Asp Ser Asp Gly Ala Thr
            500                 505                 510
Asn Ser Thr Thr Ala Ala Leu Ile Val Asn Asn Ala Val Asp Tyr Pro
        515                 520                 525
Pro Val Ala Asn Ala Gly Pro Asn His Thr Ile Thr Leu Pro Gln Asn
    530                 535                 540
Ser Ile Thr Leu Asn Gly Asn Gln Ser Ser Asp Asp His Gln Ile Val
545                 550                 555                 560
Leu Tyr Glu Trp Ser Leu Gly Pro Gly Ser Glu Gly Lys His Val Val
                565                 570                 575
Met Gln Gly Val Gln Thr Pro Tyr Leu His Leu Ser Ala Met Gln Glu
            580                 585                 590
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Gly Asp Tyr Thr Phe Gln Leu Lys Val Thr Asp Ser Ser Arg Gln Gln
        595                 600                 605
Ser Thr Ala Val Val Thr Val Ile Val Gln Pro Glu Asn Asn Arg Pro
    610                 615                 620
Pro Val Ala Val Ala Gly Pro Asp Lys Glu Leu Ile Phe Pro Val Glu
625                 630                 635                 640
Ser Ala Thr Leu Asp Gly Ser Ser Ser Ser Asp Asp His Gly Ile Val
                645                 650                 655
Phe Tyr His Trp Glu His Val Arg Gly Pro Ser Ala Val Glu Met Glu
            660                 665                 670
Asn Ile Asp Lys Ala Ile Ala Thr Val Thr Gly Leu Gln Val Gly Thr
        675                 680                 685
Tyr His Phe Arg Leu Thr Val Lys Asp Gln Gln Gly Leu Ser Ser Thr
    690                 695                 700
Ser Thr Leu Thr Val Ala Val Lys Lys Glu Asn Asn Ser Pro Pro Arg
705                 710                 715                 720
Ala Arg Ala Gly Gly Arg His Val Leu Val Leu Pro Asn Asn Ser Ile
                725                 730                 735
Thr Leu Asp Gly Ser Arg Ser Thr Asp Asp Gln Arg Ile Val Ser Tyr
            740                 745                 750
Leu Trp Ile Arg Asp Gly Gln Ser Pro Ala Ala Gly Asp Val Ile Asp
        755                 760                 765
Gly Ser Asp His Ser Val Ala Leu Gln Leu Thr Asn Leu Val Glu Gly
    770                 775                 780
Val Tyr Thr Phe His Leu Arg Val Thr Asp Ser Gln Gly Ala Ser Asp
785                 790                 795                 800
Thr Asp Thr Ala Thr Val Glu Val Gln Pro Asp Pro Arg Lys Ser Gly
                805                 810                 815
Leu Val Glu Leu Thr Leu Gln Val Gly Val Gly Gln Leu Thr Glu Gln
            820                 825                 830
Arg Lys Asp Thr Leu Val Arg Gln Leu Ala Val Leu Leu Asn Val Leu
        835                 840                 845
Asp Ser Asp Ile Lys Val Gln Lys Ile Arg Ala His Ser Asp Leu Ser
    850                 855                 860
Thr Val Ile Val Phe Tyr Val Gln Ser Arg Pro Pro Phe Lys Val Leu
865                 870                 875                 880
Lys Ala Ala Glu Val Ala Arg Asn Leu His Met Arg Leu Ser Lys Glu
                885                 890                 895
Lys Ala Asp Phe Leu Leu Phe Lys Val Leu Arg Val Asp Thr Ala Gly
            900                 905                 910
Cys Leu Leu Lys Cys Ser Gly His Gly His Cys Asp Pro Leu Thr Lys
        915                 920                 925
Arg Cys Ile Cys Ser His Leu Trp Met Glu Asn Leu Ile Gln Arg Tyr
    930                 935                 940
Ile Trp Asp Gly Glu Ser Asn Cys Glu Trp Ser Ile Phe Tyr Val Thr
945                 950                 955                 960
Val Leu Ala Phe Thr Leu Ile Val Leu Thr Gly Gly Phe Thr Trp Leu
                965                 970                 975
Cys Ile Cys Cys Cys Lys Arg Gln Lys Arg Thr Lys Ile Arg Lys Lys
            980                 985                 990
Thr Lys Tyr Thr Ile Leu Asp Asn Met Asp Glu Gln Glu Arg Met Glu
        995                 1000                1005
Leu Arg Pro Lys Tyr Gly Ile Lys His Arg Ser Thr Glu His Asn Ser
    1010                1015                1020
Ser Leu Met Val Ser Glu Ser Glu Phe Asp Ser Asp Gln Asp Thr Ile
1025                1030                1035                1040
Phe Ser Arg Glu Lys Met Glu Arg Gly Asn Pro Lys Val Ser Met Asn
                1045                1050                1055
Gly Ser Ile Arg Asn Gly Ala Ser Phe Ser Tyr Cys Ser Lys Asp Arg
            1060                1065                1070
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<212> DNA
<213> Homo sapiens

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cacccactgt gtggtgcaca atggcgcccc ccacaggtgt gctctcttca ttgctgctgc 660
tggtgacaat tgcagtttgc ttatggtgga tgcactcatg gcaaaaaaat cactggtgag 720
catcatttaa gaagaccc atg act aga ctg ggc tgg ccg agc cca tgt tgt 771
Met Thr Arg Leu Gly Trp Pro Ser Pro Cys Cys
1 5 10

gcc cgt aag cag tgc agc gag ggg agg aca tat tcc aat gca gtc att 819
Ala Arg Lys Gln Cys Ser Glu Gly Arg Thr Tyr Ser Asn Ala Val Ile
15 20 25

tca cct aac ttg gaa acc acc aga atc atg cgg gtg tct cac acc ttc 867
Ser Pro Asn Leu Glu Thr Thr Arg Ile Met Arg Val Ser His Thr Phe
30 35 40

cct gtc gta gac tgc acg gcc gct tgc tgt gac ctg tcc agc tgt gac 915
Pro Val Val Asp Cys Thr Ala Ala Cys Cys Asp Leu Ser Ser Cys Asp
45 50 55

ctg gcc tgg tgg ttc gag ggc cgc tgc tac ctg gtg agc tgc ccc cac 963
Leu Ala Trp Trp Phe Glu Gly Arg Cys Tyr Leu Val Ser Cys Pro His
60 65 70 75

aaa gag aac tgt gag ccc aag aag atg ggc ccc atc agg tct tat ctc 1011
Lys Glu Asn Cys Glu Pro Lys Lys Met Gly Pro Ile Arg Ser Tyr Leu
80 85 90

act ttt gtg ctc cgg cct gtt cag agg cct gca cag ctg ctg gac tat 1059
Thr Phe Val Leu Arg Pro Val Gln Arg Pro Ala Gln Leu Leu Asp Tyr
95 100 105

ggg gac atg atg ctg aac agg ggc tcc ccc tcg ggg atc tgg ggg gac 1107
Gly Asp Met Met Leu Asn Arg Gly Ser Pro Ser Gly Ile Trp Gly Asp
110 115 120

tca cct gag gat atc aga aag gac ttg ccc ttt cta ggc aaa gat tgg 1155
Ser Pro Glu Asp Ile Arg Lys Asp Leu Pro Phe Leu Gly Lys Asp Trp
125 130 135

ggc cta gag gag atg tct gag tac tca gat gac tac cgg gag ctg gag 1203
Gly Leu Glu Glu Met Ser Glu Tyr Ser Asp Asp Tyr Arg Glu Leu Glu
140 145 150 155

aag gac ctc ttg caa ccc agt ggc aag cag gag ccc aga ggg agt gcc 1251
Lys Asp Leu Leu Gln Pro Ser Gly Lys Gln Glu Pro Arg Gly Ser Ala
160 165 170

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gag tac acg gac tgg ggc cta ctg ccg ggc agc gag ggg gcc ttc aac   1299
Glu Tyr Thr Asp Trp Gly Leu Leu Pro Gly Ser Glu Gly Ala Phe Asn
            175                 180                 185

tcc tct gtt gga gac agt cct gcg gtg cca gcg gag acg cag cag gac   1347
Ser Ser Val Gly Asp Ser Pro Ala Val Pro Ala Glu Thr Gln Gln Asp
        190                 195                 200

cct gag ctc cat tac ctg aat gag tcg gct tca acc cct gcc cca aaa   1395
Pro Glu Leu His Tyr Leu Asn Glu Ser Ala Ser Thr Pro Ala Pro Lys
    205                 210                 215

ctc cct gag aga agt gtg ttg ctt ccc ttg ccg act act cca tct tca   1443
Leu Pro Glu Arg Ser Val Leu Leu Pro Leu Pro Thr Thr Pro Ser Ser
220                 225                 230                 235

gga gag gtg ttg gag aaa gaa aag gct tct cag ctc cag gaa caa tcc   1491
Gly Glu Val Leu Glu Lys Glu Lys Ala Ser Gln Leu Gln Glu Gln Ser
                240                 245                 250

agc aac agc tct gga aaa gag gtt cta atg cct tcc cat agt ctt cct   1539
Ser Asn Ser Ser Gly Lys Glu Val Leu Met Pro Ser His Ser Leu Pro
            255                 260                 265

ccg gca agc ctg gag ctc agc tca gtc acc gtg gag aaa agc cca gtg   1587
Pro Ala Ser Leu Glu Leu Ser Ser Val Thr Val Glu Lys Ser Pro Val
        270                 275                 280

ctc aca gtc acc ccg ggg agt aca gag cac agc atc cca aca cct ccc   1635
Leu Thr Val Thr Pro Gly Ser Thr Glu His Ser Ile Pro Thr Pro Pro
    285                 290                 295

act agc gca gcc ccc tct gag tcc acc cca tct gag cta ccc ata tct   1683
Thr Ser Ala Ala Pro Ser Glu Ser Thr Pro Ser Glu Leu Pro Ile Ser
300                 305                 310                 315

cct acc act gct ccc agg aca gtg aaa gaa ctt acg gta tcg gct gga   1731
Pro Thr Thr Ala Pro Arg Thr Val Lys Glu Leu Thr Val Ser Ala Gly
                320                 325                 330

gat aac cta att ata act tta ccc gac aat gaa gtt gaa ctg aag gcc   1779
Asp Asn Leu Ile Ile Thr Leu Pro Asp Asn Glu Val Glu Leu Lys Ala
            335                 340                 345

ttt gtt gcg cca gcg cca cct gta gaa aca acc tac aac tat gaa tgg   1827
Phe Val Ala Pro Ala Pro Pro Val Glu Thr Thr Tyr Asn Tyr Glu Trp
        350                 355                 360

aat tta ata agc cac ccc aca gac tac caa ggt gaa ata aaa caa gga   1875
Asn Leu Ile Ser His Pro Thr Asp Tyr Gln Gly Glu Ile Lys Gln Gly
    365                 370                 375

cac aag caa act ctt aac ctc tct caa ttg tcc gtc gga ctt tat gtc   1923
His Lys Gln Thr Leu Asn Leu Ser Gln Leu Ser Val Gly Leu Tyr Val
380                 385                 390                 395

ttc aaa gtc act gtt tct agt gaa aac gcc ttt gga gaa gga ttt gtc   1971
Phe Lys Val Thr Val Ser Ser Glu Asn Ala Phe Gly Glu Gly Phe Val
                400                 405                 410

aat gtc act gtt aag cct gcc aga aga gtc aac ctg cca cct gta gca   2019
Asn Val Thr Val Lys Pro Ala Arg Arg Val Asn Leu Pro Pro Val Ala
            415                 420                 425
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gtt gtt tct ccc caa ctg caa gag ctc act ttg cct ttg acg tca gcc   2067
Val Val Ser Pro Gln Leu Gln Glu Leu Thr Leu Pro Leu Thr Ser Ala
        430                 435                 440

ctc att gat ggc agc caa agt aca gat gat act gaa ata gtg agt tat   2115
Leu Ile Asp Gly Ser Gln Ser Thr Asp Asp Thr Glu Ile Val Ser Tyr
    445                 450                 455

cat tgg gaa gaa ata aac ggg ccc ttc ata gaa gag aag act tca gtt   2163
His Trp Glu Glu Ile Asn Gly Pro Phe Ile Glu Glu Lys Thr Ser Val
460                 465                 470                 475

gac tct ccc gtc tta cgc ttg tct aac ctt gat cct ggt aac tat agt   2211
Asp Ser Pro Val Leu Arg Leu Ser Asn Leu Asp Pro Gly Asn Tyr Ser
                480                 485                 490

ttc agg ttg act gtt aca gac tcg gac gga gcc act aac tct aca act   2259
Phe Arg Leu Thr Val Thr Asp Ser Asp Gly Ala Thr Asn Ser Thr Thr
            495                 500                 505

gca gcc cta ata gtg aac aat gct gtg gac tac cca cca gtt gct aat   2307
Ala Ala Leu Ile Val Asn Asn Ala Val Asp Tyr Pro Pro Val Ala Asn
        510                 515                 520

gca gga cca aat cac acc ata act ttg ccc caa aac tcc atc act ttg   2355
Ala Gly Pro Asn His Thr Ile Thr Leu Pro Gln Asn Ser Ile Thr Leu
    525                 530                 535

aat gga aac cag agc agt gac gat cac cag att gtc ctc tat gag tgg   2403
Asn Gly Asn Gln Ser Ser Asp Asp His Gln Ile Val Leu Tyr Glu Trp
540                 545                 550                 555

tcc ctg ggt cct ggg agt gag ggc aaa cat gtg gtc atg cag gga gta   2451
Ser Leu Gly Pro Gly Ser Glu Gly Lys His Val Val Met Gln Gly Val
                560                 565                 570

cag acg cca tac ctt cat tta tct gca atg cag gaa gga gat tat aca   2499
Gln Thr Pro Tyr Leu His Leu Ser Ala Met Gln Glu Gly Asp Tyr Thr
            575                 580                 585

ttt cag ctg aag gtg aca gat tct tca agg caa cag tct act gct gtg   2547
Phe Gln Leu Lys Val Thr Asp Ser Ser Arg Gln Gln Ser Thr Ala Val
        590                 595                 600

gtg act gtg att gtc cag cct gaa aac aat aga cct cca gtg gct gtg   2595
Val Thr Val Ile Val Gln Pro Glu Asn Asn Arg Pro Pro Val Ala Val
    605                 610                 615

gcc ggc cct gat aaa gag ctg atc ttc cca gtg gaa agt gct acc ctg   2643
Ala Gly Pro Asp Lys Glu Leu Ile Phe Pro Val Glu Ser Ala Thr Leu
620                 625                 630                 635

gat ggg agc agc agc agc gat gac cac ggc att gtc ttc tac cac tgg   2691
Asp Gly Ser Ser Ser Ser Asp Asp His Gly Ile Val Phe Tyr His Trp
                640                 645                 650

gag cac gtc aga ggc ccc agt gca gtg gag atg gaa aat att gac aaa   2739
Glu His Val Arg Gly Pro Ser Ala Val Glu Met Glu Asn Ile Asp Lys
            655                 660                 665

gca ata gcc act gtg act ggt ctc cag gtg ggg acc tac cac ttc cgt   2787
Ala Ile Ala Thr Val Thr Gly Leu Gln Val Gly Thr Tyr His Phe Arg
        670                 675                 680
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ttg aca gtg aaa gac cag cag gga ctg agc agc acg tcc acc ctc act   2835
Leu Thr Val Lys Asp Gln Gln Gly Leu Ser Ser Thr Ser Thr Leu Thr
    685                 690                 695

gtg gct gtg aag aag gaa aat aat agt cct ccc aga gcc cgg gct ggt   2883
Val Ala Val Lys Lys Glu Asn Asn Ser Pro Pro Arg Ala Arg Ala Gly
700                 705                 710                 715

ggc aga cat gtt ctt gtg ctt ccc aat aat tcc att act ttg gat ggt   2931
Gly Arg His Val Leu Val Leu Pro Asn Asn Ser Ile Thr Leu Asp Gly
                720                 725                 730

tca agg tct act gat gac caa aga att gtg tcc tat ctg tgg atc cgg   2979
Ser Arg Ser Thr Asp Asp Gln Arg Ile Val Ser Tyr Leu Trp Ile Arg
            735                 740                 745

gat ggc cag agt cca gca gct gga gat gtc atc gat ggc tct gac cac   3027
Asp Gly Gln Ser Pro Ala Ala Gly Asp Val Ile Asp Gly Ser Asp His
        750                 755                 760

agt gtg gct ctg cag ctt acg aat ctg gtg gag ggg gtg tac act ttc   3075
Ser Val Ala Leu Gln Leu Thr Asn Leu Val Glu Gly Val Tyr Thr Phe
    765                 770                 775

cac ttg cga gtc acc gac agt cag ggg gcc tcg gac aca gac act gcc   3123
His Leu Arg Val Thr Asp Ser Gln Gly Ala Ser Asp Thr Asp Thr Ala
780                 785                 790                 795

act gtg gaa gtg cag cca gac cct agg aag agt ggc ctg gtg gag ctg   3171
Thr Val Glu Val Gln Pro Asp Pro Arg Lys Ser Gly Leu Val Glu Leu
                800                 805                 810

acc ctg cag gtt ggt gtt ggg cag ctg aca gag cag cgg aag gac acc   3219
Thr Leu Gln Val Gly Val Gly Gln Leu Thr Glu Gln Arg Lys Asp Thr
            815                 820                 825

ctt gtg agg cag ctg gct gtg ctg ctg aac gtg ctg gac tcg gac att   3267
Leu Val Arg Gln Leu Ala Val Leu Leu Asn Val Leu Asp Ser Asp Ile
        830                 835                 840

aag gtc cag aag att cgg gcc cac tcg gat ctc agc acc gtg att gtg   3315
Lys Val Gln Lys Ile Arg Ala His Ser Asp Leu Ser Thr Val Ile Val
    845                 850                 855

ttt tat gta cag agc agg ccg cct ttc aag gtt ctc aaa gct gct gaa   3363
Phe Tyr Val Gln Ser Arg Pro Pro Phe Lys Val Leu Lys Ala Ala Glu
860                 865                 870                 875

gtg gcc cga aat ctg cac atg cgg ctc tca aag gag aag gct gac ttc   3411
Val Ala Arg Asn Leu His Met Arg Leu Ser Lys Glu Lys Ala Asp Phe
                880                 885                 890

ttg ctt ttc aag gtc ttg agg gtt gat aca gca ggt tgc ctt ctg aag   3459
Leu Leu Phe Lys Val Leu Arg Val Asp Thr Ala Gly Cys Leu Leu Lys
            895                 900                 905

tgt tct ggc cat ggt cac tgc gac ccc ctc aca aag cgc tgc att tgc   3507
Cys Ser Gly His Gly His Cys Asp Pro Leu Thr Lys Arg Cys Ile Cys
        910                 915                 920

tct cac tta tgg atg gag aac ctt ata cag cgt tat atc tgg gat gga   3555
Ser His Leu Trp Met Glu Asn Leu Ile Gln Arg Tyr Ile Trp Asp Gly
    925                 930                 935
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gag agc aac tgt gag tgg agt ata ttc tat gtg aca gtg ttg gct ttt   3603
Glu Ser Asn Cys Glu Trp Ser Ile Phe Tyr Val Thr Val Leu Ala Phe
940                 945                 950                 955

act ctt att gtg cta aca gga ggt ttc act tgg ctt tgc atc tgc tgc   3651
Thr Leu Ile Val Leu Thr Gly Gly Phe Thr Trp Leu Cys Ile Cys Cys
                960                 965                 970

tgc aaa aga caa aaa agg act aaa atc agg aaa aaa aca aag tac acc   3699
Cys Lys Arg Gln Lys Arg Thr Lys Ile Arg Lys Lys Thr Lys Tyr Thr
            975                 980                 985

atc ctg gat aac atg gat gaa cag gaa aga atg gaa ctg agg ccc aaa   3747
Ile Leu Asp Asn Met Asp Glu Gln Glu Arg Met Glu Leu Arg Pro Lys
        990                 995                 1000

tat ggt atc aag cac cga agc aca gag cac aac tcc agc ctg atg gta   3795
Tyr Gly Ile Lys His Arg Ser Thr Glu His Asn Ser Ser Leu Met Val
    1005                1010                1015

tcc gag tct gag ttt gac agt gac cag gac aca atc ttc agc cga gaa   3843
Ser Glu Ser Glu Phe Asp Ser Asp Gln Asp Thr Ile Phe Ser Arg Glu
1020                1025                1030                1035

aag atg gag aga ggg aat cca aag gtt tcc atg aat ggt tcc atc aga   3891
Lys Met Glu Arg Gly Asn Pro Lys Val Ser Met Asn Gly Ser Ile Arg
                1040                1045                1050

aat gga gct tcc ttc agt tat tgc tca aag gac aga taa tggcgcagtt    3940
Asn Gly Ala Ser Phe Ser Tyr Cys Ser Lys Asp Arg  *
            1055                1060

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tccactaaac aaagaactcc tgccttgatg gatggagggc aaattctggt ggaacttttg 5980
ggccacctga aagttctatt cccaggacta agaggaattt cttttaatgg atccagagag 6040
ccaaggtcag agggagagat ggcctgcata gtctcctgtg gatcacaccc gggccacccc 6100
tccctctagg tttacagtgg acttcttctg cccctcctcc ttttctgtcc ttggccatct 6160
cagcctggcc tctctgatcc ttccatcaca gaaggatctt gaatctctgg gaaatcaaac 6220
atcacagtag tgatcagaaa gtgagtcctg tcttgtcacc ccatttctca tcagaacaaa 6280
gcacgagatg gaatgaccaa ccagcattct tcatggtgga ctgcttatca ttgaggatct 6340
ttgggagata aagcacgcta agagctctgg acagagaaaa acaggcccta gaatatggga 6400
gtgggtgttt gtagggctca taggctaaca agcactttag ttgctggttt acattcaatg 6460
aaggaggatt catacccatg gcattacaag gctaagcatg tgtatgacta aggaactatc 6520
tgaaaaacat gcagcaaggt aagaaaatgt accactcaac aagccagtga tgccaccttt 6580
tgtgcgcggg gaggagagtg actaccattg ttttttgtgt gacaaagcta tcatggacta 6640
ttttaatctt ggttttattg cttaaaatat attatttttc cctatgtgtt gacaaggtat 6700
ttctaatatc acactattaa atatatgcac taatctaaat aaaggtgtct gtattttctg 6760
taatgcttat ttttaggggg aaatttgttt tctttatgct tcagggtaga gggattccct 6820
tgagtatagg tcagcaaact ctggcctgca gcctgtgtgt gcacgcccca tgagccgaaa 6880
agtgggtctt atgttttcaa atggttaaaa ataaataaaa aaatttgaaa catgtgaact 6940
atatgacatt cagatttgtg ttcataaata aagttttatt ggaacatatc c           6991
```

<210> 7
<211> 1063
<212> PRT
<213> Homo sapiens

<400> 7

```
Met Thr Arg Leu Gly Trp Pro Ser Pro Cys Cys Ala Arg Lys Gln Cys
 1               5                  10                  15
Ser Glu Gly Arg Thr Tyr Ser Asn Ala Val Ile Ser Pro Asn Leu Glu
            20                  25                  30
Thr Thr Arg Ile Met Arg Val Ser His Thr Phe Pro Val Val Asp Cys
        35                  40                  45
Thr Ala Ala Cys Cys Asp Leu Ser Ser Cys Asp Leu Ala Trp Trp Phe
    50                  55                  60
Glu Gly Arg Cys Tyr Leu Val Ser Cys Pro His Lys Glu Asn Cys Glu
65                  70                  75                  80
Pro Lys Lys Met Gly Pro Ile Arg Ser Tyr Leu Thr Phe Val Leu Arg
                85                  90                  95
Pro Val Gln Arg Pro Ala Gln Leu Leu Asp Tyr Gly Asp Met Met Leu
            100                 105                 110
Asn Arg Gly Ser Pro Ser Gly Ile Trp Gly Asp Ser Pro Glu Asp Ile
        115                 120                 125
Arg Lys Asp Leu Pro Phe Leu Gly Lys Asp Trp Gly Leu Glu Glu Met
    130                 135                 140
Ser Glu Tyr Ser Asp Asp Tyr Arg Glu Leu Glu Lys Asp Leu Leu Gln
145                 150                 155                 160
Pro Ser Gly Lys Gln Glu Pro Arg Gly Ser Ala Glu Tyr Thr Asp Trp
                165                 170                 175
Gly Leu Leu Pro Gly Ser Glu Gly Ala Phe Asn Ser Ser Val Gly Asp
            180                 185                 190
Ser Pro Ala Val Pro Ala Glu Thr Gln Gln Asp Pro Glu Leu His Tyr
        195                 200                 205
Leu Asn Glu Ser Ala Ser Thr Pro Ala Pro Lys Leu Pro Glu Arg Ser
    210                 215                 220
Val Leu Leu Pro Leu Pro Thr Thr Pro Ser Ser Gly Glu Val Leu Glu
225                 230                 235                 240
Lys Glu Lys Ala Ser Gln Leu Gln Glu Gln Ser Ser Asn Ser Ser Gly
                245                 250                 255
Lys Glu Val Leu Met Pro Ser His Ser Leu Pro Pro Ala Ser Leu Glu
            260                 265                 270
Leu Ser Ser Val Thr Val Glu Lys Ser Pro Val Leu Thr Val Thr Pro
        275                 280                 285
Gly Ser Thr Glu His Ser Ile Pro Thr Pro Pro Thr Ser Ala Ala Pro
    290                 295                 300
```

```
Ser Glu Ser Thr Pro Ser Glu Leu Pro Ile Ser Pro Thr Thr Ala Pro
305                 310                 315                 320
Arg Thr Val Lys Glu Leu Thr Val Ser Ala Gly Asp Asn Leu Ile Ile
                325                 330                 335
Thr Leu Pro Asp Asn Glu Val Glu Leu Lys Ala Phe Val Ala Pro Ala
            340                 345                 350
Pro Pro Val Glu Thr Thr Tyr Asn Tyr Glu Trp Asn Leu Ile Ser His
        355                 360                 365
Pro Thr Asp Tyr Gln Gly Glu Ile Lys Gln Gly His Lys Gln Thr Leu
    370                 375                 380
Asn Leu Ser Gln Leu Ser Val Gly Leu Tyr Val Phe Lys Val Thr Val
385                 390                 395                 400
Ser Ser Glu Asn Ala Phe Gly Glu Gly Phe Val Asn Val Thr Val Lys
                405                 410                 415
Pro Ala Arg Arg Val Asn Leu Pro Pro Val Ala Val Val Ser Pro Gln
            420                 425                 430
Leu Gln Glu Leu Thr Leu Pro Leu Thr Ser Ala Leu Ile Asp Gly Ser
        435                 440                 445
Gln Ser Thr Asp Asp Thr Glu Ile Val Ser Tyr His Trp Glu Glu Ile
    450                 455                 460
Asn Gly Pro Phe Ile Glu Glu Lys Thr Ser Val Asp Ser Pro Val Leu
465                 470                 475                 480
Arg Leu Ser Asn Leu Asp Pro Gly Asn Tyr Ser Phe Arg Leu Thr Val
                485                 490                 495
Thr Asp Ser Asp Gly Ala Thr Asn Ser Thr Thr Ala Ala Leu Ile Val
            500                 505                 510
Asn Asn Ala Val Asp Tyr Pro Pro Val Ala Asn Ala Gly Pro Asn His
        515                 520                 525
Thr Ile Thr Leu Pro Gln Asn Ser Ile Thr Leu Asn Gly Asn Gln Ser
    530                 535                 540
Ser Asp Asp His Gln Ile Val Leu Tyr Glu Trp Ser Leu Gly Pro Gly
545                 550                 555                 560
Ser Glu Gly Lys His Val Val Met Gln Gly Val Gln Thr Pro Tyr Leu
                565                 570                 575
His Leu Ser Ala Met Gln Glu Gly Asp Tyr Thr Phe Gln Leu Lys Val
            580                 585                 590
Thr Asp Ser Ser Arg Gln Gln Ser Thr Ala Val Val Thr Val Ile Val
        595                 600                 605
Gln Pro Glu Asn Asn Arg Pro Pro Val Ala Val Ala Gly Pro Asp Lys
    610                 615                 620
Glu Leu Ile Phe Pro Val Glu Ser Ala Thr Leu Asp Gly Ser Ser Ser
625                 630                 635                 640
Ser Asp Asp His Gly Ile Val Phe Tyr His Trp Glu His Val Arg Gly
                645                 650                 655
Pro Ser Ala Val Glu Met Glu Asn Ile Asp Lys Ala Ile Ala Thr Val
            660                 665                 670
Thr Gly Leu Gln Val Gly Thr Tyr His Phe Arg Leu Thr Val Lys Asp
        675                 680                 685
Gln Gln Gly Leu Ser Ser Thr Ser Thr Leu Thr Val Ala Val Lys Lys
    690                 695                 700
Glu Asn Asn Ser Pro Pro Arg Ala Arg Ala Gly Gly Arg His Val Leu
705                 710                 715                 720
Val Leu Pro Asn Asn Ser Ile Thr Leu Asp Gly Ser Arg Ser Thr Asp
                725                 730                 735
Asp Gln Arg Ile Val Ser Tyr Leu Trp Ile Arg Asp Gly Gln Ser Pro
            740                 745                 750
Ala Ala Gly Asp Val Ile Asp Gly Ser Asp His Ser Val Ala Leu Gln
        755                 760                 765
Leu Thr Asn Leu Val Glu Gly Val Tyr Thr Phe His Leu Arg Val Thr
    770                 775                 780
Asp Ser Gln Gly Ala Ser Asp Thr Asp Thr Ala Thr Val Glu Val Gln
785                 790                 795                 800
Pro Asp Pro Arg Lys Ser Gly Leu Val Glu Leu Thr Leu Gln Val Gly
                805                 810                 815
```

```
Val Gly Gln Leu Thr Glu Gln Arg Lys Asp Thr Leu Val Arg Gln Leu
            820                 825                 830
Ala Val Leu Leu Asn Val Leu Asp Ser Asp Ile Lys Val Gln Lys Ile
        835                 840                 845
Arg Ala His Ser Asp Leu Ser Thr Val Ile Val Phe Tyr Val Gln Ser
    850                 855                 860
Arg Pro Pro Phe Lys Val Leu Lys Ala Ala Glu Val Ala Arg Asn Leu
865                 870                 875                 880
His Met Arg Leu Ser Lys Glu Lys Ala Asp Phe Leu Leu Phe Lys Val
                885                 890                 895
Leu Arg Val Asp Thr Ala Gly Cys Leu Leu Lys Cys Ser Gly His Gly
            900                 905                 910
His Cys Asp Pro Leu Thr Lys Arg Cys Ile Cys Ser His Leu Trp Met
        915                 920                 925
Glu Asn Leu Ile Gln Arg Tyr Ile Trp Asp Gly Glu Ser Asn Cys Glu
    930                 935                 940
Trp Ser Ile Phe Tyr Val Thr Val Leu Ala Phe Thr Leu Ile Val Leu
945                 950                 955                 960
Thr Gly Gly Phe Thr Trp Leu Cys Ile Cys Cys Cys Lys Arg Gln Lys
                965                 970                 975
Arg Thr Lys Ile Arg Lys Lys Thr Lys Tyr Thr Ile Leu Asp Asn Met
            980                 985                 990
Asp Glu Gln Glu Arg Met Glu Leu Arg Pro Lys Tyr Gly Ile Lys His
        995                 1000                1005
Arg Ser Thr Glu His Asn Ser Ser Leu Met Val Ser Glu Ser Glu Phe
    1010                1015                1020
Asp Ser Asp Gln Asp Thr Ile Phe Ser Arg Glu Lys Met Glu Arg Gly
1025                1030                1035                1040
Asn Pro Lys Val Ser Met Asn Gly Ser Ile Arg Asn Gly Ala Ser Phe
                1045                1050                1055
Ser Tyr Cys Ser Lys Asp Arg
            1060
```

<210> 8
<211> 1072
<212> PRT
<213> Homo sapiens

<400> 8

```
Met Ala Pro Pro Thr Gly Val Leu Ser Ser Leu Leu Leu Leu Val Thr
 1               5                  10                  15
Ile Ala Gly Cys Ala Arg Lys Gln Cys Ser Glu Gly Arg Thr Tyr Ser
            20                  25                  30
Asn Ala Val Ile Ser Pro Asn Leu Glu Thr Thr Arg Ile Met Arg Val
        35                  40                  45
Ser His Thr Phe Pro Val Val Asp Cys Thr Ala Ala Cys Cys Asp Leu
    50                  55                  60
Ser Ser Cys Asp Leu Ala Trp Trp Phe Glu Gly Arg Cys Tyr Leu Val
65                  70                  75                  80
Ser Cys Pro His Lys Glu Asn Cys Glu Pro Lys Lys Met Gly Pro Ile
                85                  90                  95
Arg Ser Tyr Leu Thr Phe Val Leu Arg Pro Val Gln Arg Pro Ala Gln
            100                 105                 110
Leu Leu Asp Tyr Gly Asp Met Met Leu Asn Arg Gly Ser Pro Ser Gly
        115                 120                 125
Ile Trp Gly Asp Ser Pro Glu Asp Ile Arg Lys Asp Leu Pro Phe Leu
    130                 135                 140
Gly Lys Asp Trp Gly Leu Glu Glu Met Ser Glu Tyr Ser Asp Asp Tyr
145                 150                 155                 160
Arg Glu Leu Glu Lys Asp Leu Leu Gln Pro Ser Gly Lys Gln Glu Pro
                165                 170                 175
Arg Gly Ser Ala Glu Tyr Thr Asp Trp Gly Leu Leu Pro Gly Ser Glu
            180                 185                 190
```

```
Gly Ala Phe Asn Ser Ser Val Gly Asp Ser Pro Ala Val Pro Ala Glu
        195                 200                 205
Thr Gln Gln Asp Pro Glu Leu His Tyr Leu Asn Glu Ser Ala Ser Thr
    210                 215                 220
Pro Ala Pro Lys Leu Pro Glu Arg Ser Val Leu Leu Pro Leu Pro Thr
225                 230                 235                 240
Thr Pro Ser Ser Gly Glu Val Leu Glu Lys Glu Lys Ala Ser Gln Leu
                245                 250                 255
Gln Glu Gln Ser Ser Asn Ser Ser Gly Lys Glu Val Leu Met Pro Ser
            260                 265                 270
His Ser Leu Pro Pro Ala Ser Leu Glu Leu Ser Ser Val Thr Val Glu
        275                 280                 285
Lys Ser Pro Val Leu Thr Val Thr Pro Gly Ser Thr Glu His Ser Ile
    290                 295                 300
Pro Thr Pro Pro Thr Ser Ala Ala Pro Ser Glu Ser Thr Pro Ser Glu
305                 310                 315                 320
Leu Pro Ile Ser Pro Thr Thr Ala Pro Arg Thr Val Lys Glu Leu Thr
                325                 330                 335
Val Ser Ala Gly Asp Asn Leu Ile Ile Thr Leu Pro Asp Asn Glu Val
            340                 345                 350
Glu Leu Lys Ala Phe Val Ala Pro Ala Pro Pro Val Glu Thr Thr Tyr
        355                 360                 365
Asn Tyr Glu Trp Asn Leu Ile Ser His Pro Thr Asp Tyr Gln Gly Glu
    370                 375                 380
Ile Lys Gln Gly His Lys Gln Thr Leu Asn Leu Ser Gln Leu Ser Val
385                 390                 395                 400
Gly Leu Tyr Val Phe Lys Val Thr Val Ser Ser Glu Asn Ala Phe Gly
                405                 410                 415
Glu Gly Phe Val Asn Val Thr Val Lys Pro Ala Arg Arg Val Asn Leu
            420                 425                 430
Pro Pro Val Ala Val Val Ser Pro Gln Leu Gln Glu Leu Thr Leu Pro
        435                 440                 445
Leu Thr Ser Ala Leu Ile Asp Gly Ser Gln Ser Thr Asp Asp Thr Glu
    450                 455                 460
Ile Val Ser Tyr His Trp Glu Glu Ile Asn Gly Pro Phe Ile Glu Glu
465                 470                 475                 480
Lys Thr Ser Val Asp Ser Pro Val Leu Arg Leu Ser Asn Leu Asp Pro
                485                 490                 495
Gly Asn Tyr Ser Phe Arg Leu Thr Val Thr Asp Ser Asp Gly Ala Thr
            500                 505                 510
Asn Ser Thr Thr Ala Ala Leu Ile Val Asn Asn Ala Val Asp Tyr Pro
        515                 520                 525
Pro Val Ala Asn Ala Gly Pro Asn His Thr Ile Thr Leu Pro Gln Asn
    530                 535                 540
Ser Ile Thr Leu Asn Gly Asn Gln Ser Ser Asp Asp His Gln Ile Val
545                 550                 555                 560
Leu Tyr Glu Trp Ser Leu Gly Pro Gly Ser Glu Gly Lys His Val Val
                565                 570                 575
Met Gln Gly Val Gln Thr Pro Tyr Leu His Leu Ser Ala Met Gln Glu
            580                 585                 590
Gly Asp Tyr Thr Phe Gln Leu Lys Val Thr Asp Ser Ser Arg Gln Gln
        595                 600                 605
Ser Thr Ala Val Val Thr Val Ile Val Gln Pro Glu Asn Asn Arg Pro
    610                 615                 620
Pro Val Ala Val Ala Gly Pro Asp Lys Glu Leu Ile Phe Pro Val Glu
625                 630                 635                 640
Ser Ala Thr Leu Asp Gly Ser Ser Ser Ser Asp Asp His Gly Ile Val
                645                 650                 655
Phe Tyr His Trp Glu His Val Arg Gly Pro Ser Ala Val Glu Met Glu
            660                 665                 670
Asn Ile Asp Lys Ala Ile Ala Thr Val Thr Gly Leu Gln Val Gly Thr
        675                 680                 685
Tyr His Phe Arg Leu Thr Val Lys Asp Gln Gln Gly Leu Ser Ser Thr
    690                 695                 700
```

```
Ser Thr Leu Thr Val Ala Val Lys Lys Glu Asn Asn Ser Pro Pro Arg
705                 710                 715                 720
Ala Arg Ala Gly Gly Arg His Val Leu Val Leu Pro Asn Asn Ser Ile
                725                 730                 735
Thr Leu Asp Gly Ser Arg Ser Thr Asp Asp Gln Arg Ile Val Ser Tyr
            740                 745                 750
Leu Trp Ile Arg Asp Gly Gln Ser Pro Ala Ala Gly Asp Val Ile Asp
        755                 760                 765
Gly Ser Asp His Ser Val Ala Leu Gln Leu Thr Asn Leu Val Glu Gly
    770                 775                 780
Val Tyr Thr Phe His Leu Arg Val Thr Asp Ser Gln Gly Ala Ser Asp
785                 790                 795                 800
Thr Asp Thr Ala Thr Val Glu Val Gln Pro Asp Pro Arg Lys Ser Gly
                805                 810                 815
Leu Val Glu Leu Thr Leu Gln Val Gly Val Gly Gln Leu Thr Glu Gln
            820                 825                 830
Arg Lys Asp Thr Leu Val Arg Gln Leu Ala Val Leu Leu Asn Val Leu
        835                 840                 845
Asp Ser Asp Ile Lys Val Gln Lys Ile Arg Ala His Ser Asp Leu Ser
    850                 855                 860
Thr Val Ile Val Phe Tyr Val Gln Ser Arg Pro Pro Phe Lys Val Leu
865                 870                 875                 880
Lys Ala Ala Glu Val Ala Arg Asn Leu His Met Arg Leu Ser Lys Glu
                885                 890                 895
Lys Ala Asp Phe Leu Leu Phe Lys Val Leu Arg Val Asp Thr Ala Gly
            900                 905                 910
Cys Leu Leu Lys Cys Ser Gly His Gly His Cys Asp Pro Leu Thr Lys
        915                 920                 925
Arg Cys Ile Cys Ser His Leu Trp Met Glu Asn Leu Ile Gln Arg Tyr
    930                 935                 940
Ile Trp Asp Gly Glu Ser Asn Cys Glu Trp Ser Ile Phe Tyr Val Thr
945                 950                 955                 960
Val Leu Ala Phe Thr Leu Ile Val Leu Thr Gly Gly Phe Thr Trp Leu
                965                 970                 975
Cys Ile Cys Cys Cys Lys Arg Gln Lys Arg Thr Lys Ile Arg Lys Lys
            980                 985                 990
Thr Lys Tyr Thr Ile Leu Asp Asn Met Asp Glu Gln Glu Arg Met Glu
        995                 1000                1005
Leu Arg Pro Lys Tyr Gly Ile Lys His Arg Ser Thr Glu His Asn Ser
    1010                1015                1020
Ser Leu Met Val Ser Glu Ser Glu Phe Asp Ser Asp Gln Asp Thr Ile
1025                1030                1035                1040
Phe Ser Arg Glu Lys Met Glu Arg Gly Asn Pro Lys Val Ser Met Asn
                1045                1050                1055
Gly Ser Ile Arg Asn Gly Ala Ser Phe Ser Tyr Cys Ser Lys Asp Arg
            1060                1065                1070
```

<210> 9
<211> 1072
<212> PRT
<213> Homo sapiens

<400> 9

```
Met Ala Pro Pro Thr Gly Val Leu Ser Ser Leu Leu Leu Leu Val Thr
 1                5                  10                  15
Ile Ala Gly Cys Ala Arg Lys Gln Cys Ser Glu Gly Arg Thr Tyr Ser
            20                  25                  30
Asn Ala Val Ile Ser Pro Asn Leu Glu Thr Thr Arg Ile Met Arg Val
        35                  40                  45
Ser His Thr Phe Pro Val Val Asp Cys Thr Ala Ala Cys Cys Asp Leu
    50                  55                  60
Ser Ser Cys Asp Leu Ala Trp Trp Phe Glu Gly Arg Cys Tyr Leu Val
65                  70                  75                  80
```

```
Ser Cys Pro His Lys Glu Asn Cys Glu Pro Lys Lys Met Gly Pro Ile
                85                  90                  95
Arg Ser Tyr Leu Thr Phe Val Leu Arg Pro Val Gln Arg Pro Ala Gln
            100                 105                 110
Leu Leu Asp Tyr Gly Asp Met Met Leu Asn Arg Gly Ser Pro Ser Gly
        115                 120                 125
Ile Trp Gly Asp Ser Pro Glu Asp Ile Arg Lys Asp Leu Pro Phe Leu
    130                 135                 140
Gly Lys Asp Trp Gly Leu Glu Glu Met Ser Glu Tyr Ala Asp Asp Tyr
145                 150                 155                 160
Arg Glu Leu Glu Lys Asp Leu Leu Gln Pro Ser Gly Lys Gln Glu Pro
                165                 170                 175
Arg Gly Ser Ala Glu Tyr Thr Asp Trp Gly Leu Leu Pro Gly Ser Glu
            180                 185                 190
Gly Ala Phe Asn Ser Ser Val Gly Asp Ser Pro Ala Val Pro Ala Glu
        195                 200                 205
Thr Gln Gln Asp Pro Glu Leu His Tyr Leu Asn Glu Ser Ala Ser Thr
    210                 215                 220
Pro Ala Pro Lys Leu Pro Glu Arg Ser Val Leu Leu Pro Leu Pro Thr
225                 230                 235                 240
Thr Pro Ser Ser Gly Glu Val Leu Glu Lys Glu Lys Ala Ser Gln Leu
                245                 250                 255
Gln Glu Gln Ser Ser Asn Ser Ser Gly Lys Glu Val Leu Met Pro Ser
            260                 265                 270
His Ser Leu Pro Pro Ala Ser Leu Glu Leu Ser Ser Val Thr Val Glu
        275                 280                 285
Lys Ser Pro Val Leu Thr Val Thr Pro Gly Ser Thr Glu His Ser Ile
    290                 295                 300
Pro Thr Pro Pro Thr Ser Ala Ala Pro Ser Glu Ser Thr Pro Ser Glu
305                 310                 315                 320
Leu Pro Ile Ser Pro Thr Thr Ala Pro Arg Thr Val Lys Glu Leu Thr
                325                 330                 335
Val Ser Ala Gly Asp Asn Leu Ile Ile Thr Leu Pro Asp Asn Glu Val
            340                 345                 350
Glu Leu Lys Ala Phe Val Ala Pro Ala Pro Pro Val Glu Thr Thr Tyr
        355                 360                 365
Asn Tyr Glu Trp Asn Leu Ile Ser His Pro Thr Asp Tyr Gln Gly Glu
    370                 375                 380
Ile Lys Gln Gly His Lys Gln Thr Leu Asn Leu Ser Gln Leu Ser Val
385                 390                 395                 400
Gly Leu Tyr Val Phe Lys Val Thr Val Ser Ser Glu Asn Ala Phe Gly
                405                 410                 415
Glu Gly Phe Val Asn Val Thr Val Lys Pro Ala Arg Arg Val Asn Leu
            420                 425                 430
Pro Pro Val Ala Val Val Ser Pro Gln Leu Gln Glu Leu Thr Leu Pro
        435                 440                 445
Leu Thr Ser Ala Leu Ile Asp Gly Ser Gln Ser Thr Asp Asp Thr Glu
    450                 455                 460
Ile Val Ser Tyr His Trp Glu Glu Ile Asn Gly Pro Phe Ile Glu Glu
465                 470                 475                 480
Lys Thr Ser Val Asp Ser Pro Val Leu Arg Leu Ser Asn Leu Asp Pro
                485                 490                 495
Gly Asn Tyr Ser Phe Arg Leu Thr Val Thr Asp Ser Asp Gly Ala Thr
            500                 505                 510
Asn Ser Thr Thr Ala Ala Leu Ile Val Asn Asn Ala Val Asp Tyr Pro
        515                 520                 525
Pro Val Ala Asn Ala Gly Pro Asn His Thr Ile Thr Leu Pro Gln Asn
    530                 535                 540
Ser Ile Thr Leu Asn Gly Asn Gln Ser Ser Asp Asp His Gln Ile Val
545                 550                 555                 560
Leu Tyr Glu Trp Ser Leu Gly Pro Gly Ser Glu Gly Lys His Val Val
                565                 570                 575
Met Gln Gly Val Gln Thr Pro Tyr Leu His Leu Ser Ala Met Gln Glu
            580                 585                 590
```

```
Gly Asp Tyr Thr Phe Gln Leu Lys Val Thr Asp Ser Ser Arg Gln Gln
        595                 600                 605
Ser Thr Ala Val Val Thr Val Ile Val Gln Pro Glu Asn Asn Arg Pro
    610                 615                 620
Pro Val Ala Val Ala Gly Pro Asp Lys Glu Leu Ile Phe Pro Val Glu
625                 630                 635                 640
Ser Ala Thr Leu Asp Gly Ser Ser Ser Ser Asp Asp His Gly Ile Val
                645                 650                 655
Phe Tyr His Trp Glu His Val Arg Gly Pro Ser Ala Val Glu Met Glu
            660                 665                 670
Asn Ile Asp Lys Ala Ile Ala Thr Val Thr Gly Leu Gln Val Gly Thr
        675                 680                 685
Tyr His Phe Arg Leu Thr Val Lys Asp Gln Gln Gly Leu Ser Ser Thr
    690                 695                 700
Ser Thr Leu Thr Val Ala Val Lys Lys Glu Asn Asn Ser Pro Pro Arg
705                 710                 715                 720
Ala Arg Ala Gly Gly Arg His Val Leu Val Leu Pro Asn Asn Ser Ile
                725                 730                 735
Thr Leu Asp Gly Ser Arg Ser Thr Asp Asp Gln Arg Ile Val Ser Tyr
            740                 745                 750
Leu Trp Ile Arg Asp Gly Gln Ser Pro Ala Ala Gly Asp Val Ile Asp
        755                 760                 765
Gly Ser Asp His Ser Val Ala Leu Gln Leu Thr Asn Leu Val Glu Gly
    770                 775                 780
Val Tyr Thr Phe His Leu Arg Val Thr Asp Ser Gln Gly Ala Ser Asp
785                 790                 795                 800
Thr Asp Thr Ala Thr Val Glu Val Gln Pro Asp Pro Arg Lys Ser Gly
                805                 810                 815
Leu Val Glu Leu Thr Leu Gln Val Gly Val Gly Gln Leu Thr Glu Gln
            820                 825                 830
Arg Lys Asp Thr Leu Val Arg Gln Leu Ala Val Leu Leu Asn Val Leu
        835                 840                 845
Asp Ser Asp Ile Lys Val Gln Lys Ile Arg Ala His Ser Asp Leu Ser
    850                 855                 860
Thr Val Ile Val Phe Tyr Val Gln Ser Arg Pro Pro Phe Lys Val Leu
865                 870                 875                 880
Lys Ala Ala Glu Val Ala Arg Asn Leu His Met Arg Leu Ser Lys Glu
                885                 890                 895
Lys Ala Asp Phe Leu Leu Phe Lys Val Leu Arg Val Asp Thr Ala Gly
            900                 905                 910
Cys Leu Leu Lys Cys Ser Gly His Gly His Cys Asp Pro Leu Thr Lys
        915                 920                 925
Arg Cys Ile Cys Ser His Leu Trp Met Glu Asn Leu Ile Gln Arg Tyr
    930                 935                 940
Ile Trp Asp Gly Glu Ser Asn Cys Glu Trp Ser Ile Phe Tyr Val Thr
945                 950                 955                 960
Val Leu Ala Phe Thr Leu Ile Val Leu Thr Gly Gly Phe Thr Trp Leu
                965                 970                 975
Cys Ile Cys Cys Cys Lys Arg Gln Lys Arg Thr Lys Ile Arg Lys Lys
            980                 985                 990
Thr Lys Tyr Thr Ile Leu Asp Asn Met Asp Glu Gln Glu Arg Met Glu
        995                 1000                1005
Leu Arg Pro Lys Tyr Gly Ile Lys His Arg Ser Thr Glu His Asn Ser
    1010                1015                1020
Ser Leu Met Val Ser Glu Ser Glu Phe Asp Ser Asp Gln Asp Thr Ile
1025                1030                1035                1040
Phe Ser Arg Glu Lys Met Glu Arg Gly Asn Pro Lys Val Ser Met Asn
                1045                1050                1055
Gly Ser Ile Arg Asn Gly Ala Ser Phe Ser Tyr Cys Ser Lys Asp Arg
            1060                1065                1070
```

<210> 10
<211> 1063

<212> PRT
<213> Homo sapiens

<400> 10

```
Met Thr Arg Leu Gly Trp Pro Ser Pro Cys Cys Ala Arg Lys Gln Cys
 1               5                  10                  15
Ser Glu Gly Arg Thr Tyr Ser Asn Ala Val Ile Ser Pro Asn Leu Glu
            20                  25                  30
Thr Thr Arg Ile Met Arg Val Ser His Thr Phe Pro Val Val Asp Cys
        35                  40                  45
Thr Ala Ala Cys Cys Asp Leu Ser Ser Cys Asp Leu Ala Trp Trp Phe
    50                  55                  60
Glu Gly Arg Cys Tyr Leu Val Ser Cys Pro His Lys Glu Asn Cys Glu
65                  70                  75                  80
Pro Lys Lys Met Gly Pro Ile Arg Ser Tyr Leu Thr Phe Val Leu Arg
                85                  90                  95
Pro Val Gln Arg Pro Ala Gln Leu Leu Asp Tyr Gly Asp Met Met Leu
            100                 105                 110
Asn Arg Gly Ser Pro Ser Gly Ile Trp Gly Asp Ser Pro Glu Asp Ile
        115                 120                 125
Arg Lys Asp Leu Pro Phe Leu Gly Lys Asp Trp Gly Leu Glu Glu Met
    130                 135                 140
Ser Glu Tyr Ser Asp Asp Tyr Arg Glu Leu Glu Lys Asp Leu Leu Gln
145                 150                 155                 160
Pro Ser Gly Lys Gln Glu Pro Arg Gly Ser Ala Glu Tyr Thr Asp Trp
                165                 170                 175
Gly Leu Leu Pro Gly Ser Glu Gly Ala Phe Asn Ser Ser Val Gly Asp
            180                 185                 190
Ser Pro Ala Val Pro Ala Glu Thr Gln Gln Asp Pro Glu Leu His Tyr
        195                 200                 205
Leu Asn Glu Ser Ala Ser Thr Pro Ala Pro Lys Leu Pro Glu Arg Ser
    210                 215                 220
Val Leu Leu Pro Leu Pro Thr Thr Pro Ser Ser Gly Glu Val Leu Glu
225                 230                 235                 240
Lys Glu Lys Ala Ser Gln Leu Gln Glu Gln Ser Ser Asn Ser Ser Gly
                245                 250                 255
Lys Glu Val Leu Met Pro Ser His Ser Leu Pro Pro Ala Ser Leu Glu
            260                 265                 270
Leu Ser Ser Val Thr Val Glu Lys Ser Pro Val Leu Thr Val Thr Pro
        275                 280                 285
Gly Ser Thr Glu His Ser Ile Pro Thr Pro Pro Thr Ser Ala Ala Pro
    290                 295                 300
Ser Glu Ser Thr Pro Ser Glu Leu Pro Ile Ser Pro Thr Thr Ala Pro
305                 310                 315                 320
Arg Thr Val Lys Glu Leu Thr Val Ser Ala Gly Asp Asn Leu Ile Ile
                325                 330                 335
Thr Leu Pro Asp Asn Glu Val Glu Leu Lys Ala Phe Val Ala Pro Ala
            340                 345                 350
Pro Pro Val Glu Thr Thr Tyr Asn Tyr Glu Trp Asn Leu Ile Ser His
        355                 360                 365
Pro Thr Asp Tyr Gln Gly Glu Ile Lys Gln Gly His Lys Gln Thr Leu
    370                 375                 380
Asn Leu Ser Gln Leu Ser Val Gly Leu Tyr Val Phe Lys Val Thr Val
385                 390                 395                 400
Ser Ser Glu Asn Ala Phe Gly Glu Gly Phe Val Asn Val Thr Val Lys
                405                 410                 415
Pro Ala Arg Arg Val Asn Leu Pro Pro Val Ala Val Val Ser Pro Gln
            420                 425                 430
Leu Gln Glu Leu Thr Leu Pro Leu Thr Ser Ala Leu Ile Asp Gly Ser
        435                 440                 445
Gln Ser Thr Asp Asp Thr Glu Ile Val Ser Tyr His Trp Glu Glu Ile
    450                 455                 460
Asn Gly Pro Phe Ile Glu Glu Lys Thr Ser Val Asp Ser Pro Val Leu
465                 470                 475                 480
```

```
Arg Leu Ser Asn Leu Asp Pro Gly Asn Tyr Ser Phe Arg Leu Thr Val
                485                 490                 495
Thr Asp Ser Asp Gly Ala Thr Asn Ser Thr Thr Ala Ala Leu Ile Val
            500                 505                 510
Asn Asn Ala Val Asp Tyr Pro Pro Val Ala Asn Ala Gly Pro Asn His
        515                 520                 525
Thr Ile Thr Leu Pro Gln Asn Ser Ile Thr Leu Asn Gly Asn Gln Ser
    530                 535                 540
Ser Asp Asp His Gln Ile Val Leu Tyr Glu Trp Ser Leu Gly Pro Gly
545                 550                 555                 560
Ser Glu Gly Lys His Val Val Met Gln Gly Val Gln Thr Pro Tyr Leu
                565                 570                 575
His Leu Ser Ala Met Gln Glu Gly Asp Tyr Thr Phe Gln Leu Lys Val
            580                 585                 590
Thr Asp Ser Ser Arg Gln Gln Ser Thr Ala Val Val Thr Val Ile Val
        595                 600                 605
Gln Pro Glu Asn Asn Arg Pro Pro Val Ala Val Ala Gly Pro Asp Lys
    610                 615                 620
Glu Leu Ile Phe Pro Val Glu Ser Ala Thr Leu Asp Gly Ser Ser Ser
625                 630                 635                 640
Ser Asp Asp His Gly Ile Val Phe Tyr His Trp Glu His Val Arg Gly
                645                 650                 655
Pro Ser Ala Val Glu Met Glu Asn Ile Asp Lys Ala Ile Ala Thr Val
            660                 665                 670
Thr Gly Leu Gln Val Gly Thr Tyr His Phe Arg Leu Thr Val Lys Asp
        675                 680                 685
Gln Gln Gly Leu Ser Ser Thr Ser Thr Leu Thr Val Ala Val Lys Lys
    690                 695                 700
Glu Asn Asn Ser Pro Pro Arg Ala Arg Ala Gly Gly Arg His Val Leu
705                 710                 715                 720
Val Leu Pro Asn Asn Ser Ile Thr Leu Asp Gly Ser Arg Ser Thr Asp
                725                 730                 735
Asp Gln Arg Ile Val Ser Tyr Leu Trp Ile Arg Asp Gly Gln Ser Pro
            740                 745                 750
Ala Ala Gly Asp Val Ile Asp Gly Ser Asp His Ser Val Ala Leu Gln
        755                 760                 765
Leu Thr Asn Leu Val Glu Gly Val Tyr Thr Phe His Leu Arg Val Thr
    770                 775                 780
Asp Ser Gln Gly Ala Ser Asp Thr Asp Thr Ala Thr Val Glu Val Gln
785                 790                 795                 800
Pro Asp Pro Arg Lys Ser Gly Leu Val Glu Leu Thr Leu Gln Val Gly
                805                 810                 815
Val Gly Gln Leu Thr Glu Gln Arg Lys Asp Thr Leu Val Arg Gln Leu
            820                 825                 830
Ala Val Leu Leu Asn Val Leu Asp Ser Asp Ile Lys Val Gln Lys Ile
        835                 840                 845
Arg Ala His Ser Asp Leu Ser Thr Val Ile Val Phe Tyr Val Gln Ser
    850                 855                 860
Arg Pro Pro Phe Lys Val Leu Lys Ala Ala Glu Val Ala Arg Asn Leu
865                 870                 875                 880
His Met Arg Leu Ser Lys Glu Lys Ala Asp Phe Leu Leu Phe Lys Val
                885                 890                 895
Leu Arg Val Asp Thr Ala Gly Cys Leu Leu Lys Cys Ser Gly His Gly
            900                 905                 910
His Cys Asp Pro Leu Thr Lys Arg Cys Ile Cys Ser His Leu Trp Met
        915                 920                 925
Glu Asn Leu Ile Gln Arg Tyr Ile Trp Asp Gly Glu Ser Asn Cys Glu
    930                 935                 940
Trp Ser Ile Phe Tyr Val Thr Val Leu Ala Phe Thr Leu Ile Val Leu
945                 950                 955                 960
Thr Gly Gly Phe Thr Trp Leu Cys Ile Cys Cys Cys Lys Arg Gln Lys
                965                 970                 975
Arg Thr Lys Ile Arg Lys Lys Thr Lys Tyr Thr Ile Leu Asp Asn Met
            980                 985                 990
```

```
Asp Glu Gln Glu Arg Met Glu Leu Arg Pro Lys Tyr Gly Ile Lys His
        995                 1000                1005
Arg Ser Thr Glu His Asn Ser Ser Leu Met Val Ser Glu Ser Glu Phe
    1010                1015                1020
Asp Ser Asp Gln Asp Thr Ile Phe Ser Arg Glu Lys Met Glu Arg Gly
1025                1030                1035                1040
Asn Pro Lys Val Ser Met Asn Gly Ser Ile Arg Asn Gly Ala Ser Phe
                1045                1050                1055
Ser Tyr Cys Ser Lys Asp Arg
            1060
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<210> 11
<211> 1072
<212> PRT
<213> Homo sapiens

<400> 11

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Met Ala Pro Pro Thr Gly Val Leu Ser Ser Leu Leu Leu Leu Val Thr
 1               5                  10                  15
Ile Ala Gly Cys Ala Arg Lys Gln Cys Ser Glu Gly Arg Thr Tyr Ser
            20                  25                  30
Asn Ala Val Ile Ser Pro Asn Leu Glu Thr Thr Arg Ile Met Arg Val
        35                  40                  45
Ser His Thr Phe Pro Val Val Asp Cys Thr Ala Ala Cys Cys Asp Leu
    50                  55                  60
Ser Ser Cys Asp Leu Ala Trp Trp Phe Glu Gly Arg Cys Tyr Leu Val
65                  70                  75                  80
Ser Cys Pro His Lys Glu Asn Cys Glu Pro Lys Lys Met Gly Pro Ile
                85                  90                  95
Arg Ser Tyr Leu Thr Phe Val Leu Arg Pro Val Gln Arg Pro Ala Gln
            100                 105                 110
Leu Leu Asp Tyr Gly Asp Met Met Leu Asn Arg Gly Ser Pro Ser Gly
        115                 120                 125
Ile Trp Gly Asp Ser Pro Glu Asp Ile Arg Lys Asp Leu Thr Phe Leu
    130                 135                 140
Gly Lys Asp Trp Gly Leu Glu Glu Met Ser Glu Tyr Ser Asp Asp Tyr
145                 150                 155                 160
Arg Glu Leu Glu Lys Asp Leu Leu Gln Pro Ser Gly Lys Gln Glu Pro
                165                 170                 175
Arg Gly Ser Ala Glu Tyr Thr Asp Trp Gly Leu Leu Pro Gly Ser Glu
            180                 185                 190
Gly Ala Phe Asn Ser Ser Val Gly Asp Ser Pro Ala Val Pro Ala Glu
        195                 200                 205
Thr Gln Gln Asp Pro Glu Leu His Tyr Leu Asn Glu Ser Ala Ser Thr
    210                 215                 220
Pro Ala Pro Lys Leu Pro Glu Arg Ser Val Leu Leu Pro Leu Pro Thr
225                 230                 235                 240
Thr Pro Ser Ser Gly Glu Val Leu Glu Lys Glu Lys Ala Ser Gln Leu
                245                 250                 255
Gln Glu Gln Ser Ser Asn Ser Ser Gly Lys Glu Val Leu Met Pro Ser
            260                 265                 270
His Ser Leu Pro Pro Ala Ser Leu Glu Leu Ser Ser Val Thr Val Glu
        275                 280                 285
Lys Ser Pro Val Leu Thr Val Thr Pro Gly Ser Thr Glu His Ser Ile
    290                 295                 300
Pro Thr Pro Pro Thr Ser Ala Ala Pro Ser Glu Ser Thr Pro Ser Glu
305                 310                 315                 320
Leu Pro Ile Ser Pro Thr Thr Ala Pro Arg Thr Val Lys Glu Leu Thr
                325                 330                 335
Val Ser Ala Gly Asp Asn Leu Ile Ile Thr Leu Pro Asp Asn Glu Val
            340                 345                 350
Glu Leu Lys Ala Phe Val Ala Pro Ala Pro Pro Val Glu Thr Thr Tyr
        355                 360                 365
```

```
Asn Tyr Glu Trp Asn Leu Ile Ser His Pro Thr Asp Tyr Gln Gly Glu
    370                 375                 380
Ile Lys Gln Gly His Lys Gln Thr Leu Asn Leu Ser Gln Leu Ser Val
385                 390                 395                 400
Gly Leu Tyr Val Phe Lys Val Thr Val Ser Ser Glu Asn Ala Phe Gly
                405                 410                 415
Glu Gly Phe Val Asn Val Thr Val Lys Pro Ala Arg Arg Val Asn Leu
            420                 425                 430
Pro Pro Val Ala Val Val Ser Pro Gln Leu Gln Glu Leu Thr Leu Pro
        435                 440                 445
Leu Thr Ser Ala Leu Ile Asp Gly Ser Gln Ser Thr Asp Asp Thr Glu
    450                 455                 460
Ile Val Ser Tyr His Trp Glu Glu Ile Asn Gly Pro Phe Ile Glu Glu
465                 470                 475                 480
Lys Thr Ser Val Asp Ser Pro Val Leu Arg Leu Ser Asn Leu Asp Pro
                485                 490                 495
Gly Asn Tyr Ser Phe Arg Leu Thr Val Thr Asp Ser Asp Gly Ala Thr
            500                 505                 510
Asn Ser Thr Thr Ala Ala Leu Ile Val Asn Asn Ala Val Asp Tyr Pro
        515                 520                 525
Pro Val Ala Asn Ala Gly Pro Asn His Thr Ile Thr Leu Pro Gln Asn
    530                 535                 540
Ser Ile Thr Leu Asn Gly Asn Gln Ser Ser Asp Asp His Gln Ile Val
545                 550                 555                 560
Leu Tyr Glu Trp Ser Leu Gly Pro Gly Ser Glu Gly Lys His Val Val
                565                 570                 575
Met Gln Gly Val Gln Thr Pro Tyr Leu His Leu Ser Ala Met Gln Glu
            580                 585                 590
Gly Asp Tyr Thr Phe Gln Leu Lys Val Thr Asp Ser Ser Arg Gln Gln
        595                 600                 605
Ser Thr Ala Val Val Thr Val Ile Val Gln Pro Glu Asn Asn Arg Pro
    610                 615                 620
Pro Val Ala Val Ala Gly Pro Asp Lys Glu Leu Ile Phe Pro Val Glu
625                 630                 635                 640
Ser Ala Thr Leu Asp Gly Ser Ser Ser Ser Asp Asp His Gly Ile Val
                645                 650                 655
Phe Tyr His Trp Glu His Val Arg Gly Pro Ser Ala Val Glu Met Glu
            660                 665                 670
Asn Ile Asp Lys Ala Ile Ala Thr Val Thr Gly Leu Gln Val Gly Thr
        675                 680                 685
Tyr His Phe Arg Leu Thr Val Lys Asp Gln Gln Gly Leu Ser Ser Thr
    690                 695                 700
Ser Thr Leu Thr Val Ala Val Lys Lys Glu Asn Asn Ser Pro Pro Arg
705                 710                 715                 720
Ala Arg Ala Gly Gly Arg His Val Leu Val Leu Pro Asn Asn Ser Ile
                725                 730                 735
Thr Leu Asp Gly Ser Arg Ser Thr Asp Asp Gln Arg Ile Val Ser Tyr
            740                 745                 750
Leu Trp Ile Arg Asp Gly Gln Ser Pro Ala Ala Gly Asp Val Ile Asp
        755                 760                 765
Gly Ser Asp His Ser Val Ala Leu Gln Leu Thr Asn Leu Val Glu Gly
    770                 775                 780
Val Tyr Thr Phe His Leu Arg Val Thr Asp Ser Gln Gly Ala Ser Asp
785                 790                 795                 800
Thr Asp Thr Ala Thr Val Glu Val Gln Pro Asp Pro Arg Lys Ser Gly
                805                 810                 815
Leu Val Glu Leu Thr Leu Gln Val Gly Val Gly Gln Leu Thr Glu Gln
            820                 825                 830
Arg Lys Asp Thr Leu Val Arg Gln Leu Ala Val Leu Leu Asn Val Leu
        835                 840                 845
Asp Ser Asp Ile Lys Val Gln Lys Ile Arg Ala His Ser Asp Leu Ser
    850                 855                 860
Thr Val Ile Val Phe Tyr Val Gln Ser Arg Pro Pro Phe Lys Val Leu
865                 870                 875                 880
```

```
Lys Ala Ala Glu Val Ala Arg Asn Leu His Met Arg Leu Ser Lys Glu
                885                 890                 895
Lys Ala Asp Phe Leu Leu Phe Lys Val Leu Arg Val Asp Thr Ala Gly
            900                 905                 910
Cys Leu Leu Lys Cys Ser Gly His Gly His Cys Asp Pro Leu Thr Lys
        915                 920                 925
Arg Cys Ile Cys Ser His Leu Trp Met Glu Asn Leu Ile Gln Arg Tyr
    930                 935                 940
Ile Trp Asp Gly Glu Ser Asn Cys Glu Trp Ser Ile Phe Tyr Val Thr
945                 950                 955                 960
Val Leu Ala Phe Thr Leu Ile Val Leu Thr Gly Gly Phe Thr Trp Leu
                965                 970                 975
Cys Ile Cys Cys Cys Lys Arg Gln Lys Arg Thr Lys Ile Arg Lys Lys
            980                 985                 990
Thr Lys Tyr Thr Ile Leu Asp Asn Met Asp Glu Gln Glu Arg Met Glu
        995                 1000                1005
Leu Arg Pro Lys Tyr Gly Ile Lys His Arg Ser Thr Glu His Asn Ser
    1010                1015                1020
Ser Leu Met Val Ser Glu Ser Glu Phe Asp Ser Asp Gln Asp Thr Ile
1025                1030                1035                1040
Phe Ser Arg Glu Lys Met Glu Arg Gly Asn Pro Lys Val Ser Met Asn
                1045                1050                1055
Gly Ser Ile Arg Asn Gly Ala Ser Phe Ser Tyr Cys Ser Lys Asp Arg
            1060                1065                1070
```

<210> 12
<211> 1072
<212> PRT
<213> Homo sapiens

<400> 12

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Met Ala Pro Pro Thr Gly Val Leu Ser Ser Leu Leu Leu Leu Val Thr
 1                5                  10                  15
Ile Ala Gly Cys Ala Arg Lys Gln Cys Ser Glu Gly Arg Thr Tyr Ser
            20                  25                  30
Asn Ala Val Ile Ser Pro Asn Leu Glu Thr Thr Arg Ile Met Arg Val
        35                  40                  45
Ser His Thr Phe Pro Val Val Asp Cys Thr Ala Ala Cys Cys Asp Leu
    50                  55                  60
Ser Ser Cys Asp Leu Ala Trp Trp Phe Glu Gly Arg Cys Tyr Leu Val
65                  70                  75                  80
Ser Cys Pro His Lys Glu Asn Cys Glu Pro Lys Lys Met Gly Pro Ile
                85                  90                  95
Arg Ser Tyr Leu Thr Phe Val Leu Arg Pro Val Gln Arg Pro Ala Gln
            100                 105                 110
Leu Leu Asp Tyr Gly Asp Met Met Leu Asn Arg Gly Ser Pro Ser Gly
        115                 120                 125
Ile Trp Gly Asp Ser Pro Glu Asp Ile Arg Lys Asp Leu Pro Phe Leu
    130                 135                 140
Gly Lys Asp Trp Gly Leu Glu Glu Met Ser Glu Tyr Ala Asp Asp Tyr
145                 150                 155                 160
Arg Glu Leu Glu Lys Asp Leu Leu Gln Pro Ser Gly Lys Gln Glu Pro
                165                 170                 175
Arg Gly Ser Ala Glu Tyr Thr Asp Trp Gly Leu Leu Pro Gly Ser Glu
            180                 185                 190
Gly Ala Phe Asn Ser Ser Val Gly Asp Ser Pro Ala Val Pro Ala Glu
        195                 200                 205
Thr Gln Gln Asp Pro Glu Leu His Tyr Leu Asn Glu Ser Ala Ser Thr
    210                 215                 220
Pro Ala Pro Lys Leu Pro Glu Arg Ser Val Leu Leu Pro Leu Pro Thr
225                 230                 235                 240
Thr Pro Ser Ser Gly Glu Val Leu Glu Lys Glu Lys Ala Ser Gln Leu
                245                 250                 255
```

```
Gln Glu Gln Ser Ser Asn Ser Ser Gly Lys Glu Val Leu Met Pro Ser
            260                 265                 270
His Ser Leu Pro Pro Ala Ser Leu Glu Leu Ser Ser Val Thr Val Glu
        275                 280                 285
Lys Ser Pro Val Leu Thr Val Thr Pro Gly Ser Thr Glu His Ser Ile
    290                 295                 300
Pro Thr Pro Pro Thr Ser Ala Ala Pro Ser Glu Ser Thr Pro Ser Glu
305                 310                 315                 320
Leu Pro Ile Ser Pro Thr Thr Ala Pro Arg Thr Val Lys Glu Leu Thr
                325                 330                 335
Val Ser Ala Gly Asp Asn Leu Ile Ile Thr Leu Pro Asp Asn Glu Val
            340                 345                 350
Glu Leu Lys Ala Phe Val Ala Pro Ala Pro Pro Val Glu Thr Thr Tyr
        355                 360                 365
Asn Tyr Glu Trp Asn Leu Ile Ser His Pro Thr Asp Tyr Gln Gly Glu
    370                 375                 380
Ile Lys Gln Gly His Lys Gln Thr Leu Asn Leu Ser Gln Leu Ser Val
385                 390                 395                 400
Gly Leu Tyr Val Phe Lys Val Thr Val Ser Ser Glu Asn Ala Phe Gly
                405                 410                 415
Glu Gly Phe Val Asn Val Thr Val Lys Pro Ala Arg Arg Val Asn Leu
            420                 425                 430
Pro Pro Val Ala Val Val Ser Pro Gln Leu Gln Glu Leu Thr Leu Pro
        435                 440                 445
Leu Thr Ser Ala Leu Ile Asp Gly Ser Gln Ser Thr Asp Asp Thr Glu
    450                 455                 460
Ile Val Ser Tyr His Trp Glu Glu Ile Asn Gly Pro Phe Ile Glu Glu
465                 470                 475                 480
Lys Thr Ser Val Asp Ser Pro Val Leu Arg Leu Ser Asn Leu Asp Pro
                485                 490                 495
Gly Asn Tyr Ser Phe Arg Leu Thr Val Thr Asp Ser Asp Gly Ala Thr
            500                 505                 510
Asn Ser Thr Thr Ala Ala Leu Ile Val Asn Asn Ala Val Asp Tyr Pro
        515                 520                 525
Pro Val Ala Asn Ala Gly Pro Asn His Thr Ile Thr Leu Pro Gln Asn
    530                 535                 540
Ser Ile Thr Leu Asn Gly Asn Gln Ser Ser Asp Asp His Gln Ile Val
545                 550                 555                 560
Leu Tyr Glu Trp Ser Leu Gly Pro Gly Ser Glu Gly Lys His Val Val
                565                 570                 575
Met Gln Gly Val Gln Thr Pro Tyr Leu His Leu Ser Ala Met Gln Glu
            580                 585                 590
Gly Asp Tyr Thr Phe Gln Leu Lys Val Thr Asp Ser Ser Arg Gln Gln
        595                 600                 605
Ser Thr Ala Val Val Thr Val Ile Val Gln Pro Glu Asn Asn Arg Pro
    610                 615                 620
Pro Val Ala Val Ala Gly Pro Asp Lys Glu Leu Ile Phe Pro Val Glu
625                 630                 635                 640
Ser Ala Thr Leu Asp Gly Ser Ser Ser Ser Asp Asp His Gly Ile Val
                645                 650                 655
Phe Tyr His Trp Glu His Val Arg Gly Pro Ser Ala Val Glu Met Glu
            660                 665                 670
Asn Ile Asp Lys Ala Ile Ala Thr Val Thr Gly Leu Gln Val Gly Thr
        675                 680                 685
Tyr His Phe Arg Leu Thr Val Lys Asp Gln Gln Gly Leu Ser Ser Thr
    690                 695                 700
Ser Thr Leu Thr Val Ala Val Lys Lys Glu Asn Asn Ser Pro Pro Arg
705                 710                 715                 720
Ala Arg Ala Gly Gly Arg His Val Leu Val Leu Pro Asn Asn Ser Ile
                725                 730                 735
Thr Leu Asp Gly Ser Arg Ser Thr Asp Asp Gln Arg Ile Val Ser Tyr
            740                 745                 750
Leu Trp Ile Arg Asp Gly Gln Ser Pro Ala Ala Gly Asp Val Ile Asp
        755                 760                 765
```

```
Gly Ser Asp His Ser Val Ala Leu Gln Leu Thr Asn Leu Val Glu Gly
    770                 775                 780
Val Tyr Thr Phe His Leu Arg Val Thr Asp Ser Gln Gly Ala Ser Asp
785                 790                 795                 800
Thr Asp Thr Ala Thr Val Glu Val Gln Pro Asp Pro Arg Lys Ser Gly
                805                 810                 815
Leu Val Glu Leu Thr Leu Gln Val Gly Val Gly Gln Leu Thr Glu Gln
            820                 825                 830
Arg Lys Asp Thr Leu Val Arg Gln Leu Ala Val Leu Leu Asn Val Leu
        835                 840                 845
Asp Ser Asp Ile Lys Val Gln Lys Ile Arg Ala His Ser Asp Leu Ser
    850                 855                 860
Thr Val Ile Val Phe Tyr Val Gln Ser Arg Pro Pro Phe Lys Val Leu
865                 870                 875                 880
Lys Ala Ala Glu Val Ala Arg Asn Leu His Met Arg Leu Ser Lys Glu
                885                 890                 895
Lys Ala Asp Phe Leu Leu Phe Lys Val Leu Arg Val Asp Thr Ala Gly
            900                 905                 910
Cys Leu Leu Lys Cys Ser Gly His Gly His Cys Asp Pro Leu Thr Lys
        915                 920                 925
Arg Cys Ile Cys Ser His Leu Trp Met Glu Asn Leu Ile Gln Arg Tyr
    930                 935                 940
Ile Trp Asp Gly Glu Ser Asn Cys Glu Trp Ser Ile Phe Tyr Val Thr
945                 950                 955                 960
Val Leu Ala Phe Thr Leu Ile Val Leu Thr Gly Gly Phe Thr Trp Leu
                965                 970                 975
Cys Ile Cys Cys Cys Lys Arg Gln Lys Arg Thr Lys Ile Arg Lys Lys
            980                 985                 990
Thr Lys Tyr Thr Ile Leu Asp Asn Met Asp Glu Gln Glu Arg Met Glu
        995                 1000                1005
Leu Arg Pro Lys Tyr Gly Ile Lys His Arg Ser Thr Glu His Asn Ser
    1010                1015                1020
Ser Leu Met Val Ser Glu Ser Glu Phe Asp Ser Asp Gln Asp Thr Ile
1025                1030                1035                1040
Phe Ser Arg Glu Lys Met Glu Arg Gly Asn Pro Lys Val Ser Met Asn
                1045                1050                1055
Gly Ser Ile Arg Asn Gly Ala Ser Phe Ser Tyr Cys Ser Lys Asp Arg
            1060                1065                1070
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<210> 13
<211> 14
<212> PRT
<213> tetanus toxoid

<400> 13
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Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu
 1               5                  10
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<210> 14
<211> 21
<212> PRT
<213> Plasmodium falciparum

<400> 14
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Asp Ile Glu Lys Lys Ile Ala Lys Met Glu Lys Ala Ser Ser Val Phe
 1               5                  10                  15
Asn Val Val Asn Ser
            20
```

<210> 15
<211> 16

<212> PRT
<213> Streptococcus

<400> 15
Gly Ala Val Asp Ser Ile Leu Gly Gly Val Ala Thr Tyr Gly Ala Ala
 1   5   10   15

<210> 16
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> pan-DR-binding epitope

<221> VARIANT
<222> 1, 13
<223> Xaa = D-alanine or L-alanine

<221> VARIANT
<222> 3
<223> Xaa = cyclohexylalanine, phenylalanine, or
      tyrosine

<400> 16
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 1   5   10

<210> 17
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
<223> cDNA synthesis primer

<400> 17
ttttgatcaa gctt   14

<210> 18
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 18
ctaatacgac tcactatagg gctcgagcgg ccgcccgggc ag   42

<210> 19
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 19
gatcctgccc gg   12

<210> 20

<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 20
gtaatacgac tcactatagg gcagcgtggt cgcggccgag 40

<210> 21
<211> 10
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 21
gatcctcggc 10

<210> 22
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 22
ctaatacgac tcactatagg gc 22

<210> 23
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 23
tcgagcggcc gcccgggcag ga 22

<210> 24
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 24
agcgtggtcg cggccgagga 20

<210> 25
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 25
atatcgccgc gctcgtcgtc gacaa 25

<210> 26
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 26
agccacacgc agctcattgt agaagg 26

<210> 27
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Flag Tag

<400> 27
gattacaagg atgacgacga taag 24

<210> 28
<211> 4
<212> PRT
<213> Homo sapiens

<400> 28
Asn Ser Ser Val
1

<210> 29
<211> 4
<212> PRT
<213> Homo sapiens

<400> 29
Asn Glu Ser Ala
1

<210> 30
<211> 4
<212> PRT
<213> Homo sapiens

<400> 30
Asn Ser Ser Gly
1

<210> 31
<211> 4
<212> PRT
<213> Homo sapiens

<400> 31
Asn Leu Ser Gln
1

<210> 32

<211> 4
<212> PRT
<213> Homo sapiens

<400> 32
Asn Val Thr Val
 1

<210> 33
<211> 4
<212> PRT
<213> Homo sapiens

<400> 33
Asn Tyr Ser Phe
 1

<210> 34
<211> 4
<212> PRT
<213> Homo sapiens

<400> 34
Asn Ser Thr Thr
 1

<210> 35
<211> 4
<212> PRT
<213> Homo sapiens

<400> 35
Asn His Thr Ile
 1

<210> 36
<211> 4
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<213> Homo sapiens

<400> 36
Asn Gln Ser Ser
 1

<210> 37
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<400> 37
Asn Asn Ser Pro
 1

<210> 38
<211> 4
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<213> Homo sapiens

<400> 38
Asn Asn Ser Ile
 1

<210> 39
<211> 4
<212> PRT
<213> Homo sapiens

<400> 39
Asn Ser Ser Leu
 1

<210> 40
<211> 4
<212> PRT
<213> Homo sapiens

<400> 40
Asn Gly Ser Ile
 1

<210> 41
<211> 12
<212> PRT
<213> Homo sapiens

<400> 41
Glu Glu Met Ser Glu Tyr Ser Asp Asp Tyr Arg Glu
 1   5   10

<210> 42
<211> 11
<212> PRT
<213> Homo sapiens

<400> 42
Glu Tyr Ser Asp Asp Tyr Arg Glu Leu Glu Lys
 1   5   10

<210> 43
<211> 16
<212> PRT
<213> Homo sapiens

<400> 43
Asn Asn Ala Val Asp Tyr Pro Pro Val Ala Asn Ala Gly Pro Asn His
 1   5   10   15

<210> 44
<211> 9
<212> PRT
<213> Homo sapiens

<400> 44
Thr Gly Val Leu Ser Ser Leu Leu Leu
 1   5

<210> 45
<211> 9
<212> PRT
<213> Homo sapiens

<400> 45
Gly Val Leu Ser Ser Leu Leu Leu Leu
 1   5

<210> 46
<211> 9
<212> PRT
<213> Homo sapiens

<400> 46
Arg Lys Gln Cys Ser Glu Gly Arg Thr
 1   5

<210> 47
<211> 9
<212> PRT
<213> Homo sapiens

<400> 47
Gly Arg Thr Tyr Ser Asn Ala Val Ile
 1   5

<210> 48
<211> 9
<212> PRT
<213> Homo sapiens

<400> 48
Asn Ala Val Ile Ser Pro Asn Leu Glu
 1   5

<210> 49
<211> 9
<212> PRT
<213> Homo sapiens

<400> 49
Ile Met Arg Val Ser His Thr Phe Pro
 1   5

<210> 50
<211> 9
<212> PRT
<213> Homo sapiens

<400> 50
Cys Cys Asp Leu Ser Ser Cys Asp Leu
 1   5

<210> 51
<211> 9
<212> PRT

<213> Homo sapiens

<400> 51
Cys Asp Leu Ser Ser Cys Asp Leu Ala
 1   5

<210> 52
<211> 9
<212> PRT
<213> Homo sapiens

<400> 52
Cys Tyr Leu Val Ser Cys Pro His Lys
 1   5

<210> 53
<211> 9
<212> PRT
<213> Homo sapiens

<400> 53
Gly Pro Ile Arg Ser Tyr Leu Thr Phe
 1   5

<210> 54
<211> 9
<212> PRT
<213> Homo sapiens

<400> 54
Leu Asn Arg Gly Ser Pro Ser Gly Ile
 1   5

<210> 55
<211> 9
<212> PRT
<213> Homo sapiens

<400> 55
Arg Gly Ser Pro Ser Gly Ile Trp Gly
 1   5

<210> 56
<211> 9
<212> PRT
<213> Homo sapiens

<400> 56
Ile Trp Gly Asp Ser Pro Glu Asp Ile
 1   5

<210> 57
<211> 9
<212> PRT
<213> Homo sapiens

<400> 57
Leu Glu Glu Met Ser Glu Tyr Ser Asp

1 5

<210> 58
<211> 9
<212> PRT
<213> Homo sapiens

<400> 58
Met Ser Glu Tyr Ser Asp Asp Tyr Arg
1 5

<210> 59
<211> 9
<212> PRT
<213> Homo sapiens

<400> 59
Leu Leu Gln Pro Ser Gly Lys Gln Glu
1 5

<210> 60
<211> 9
<212> PRT
<213> Homo sapiens

<400> 60
Glu Pro Arg Gly Ser Ala Glu Tyr Thr
1 5

<210> 61
<211> 9
<212> PRT
<213> Homo sapiens

<400> 61
Leu Leu Pro Gly Ser Glu Gly Ala Phe
1 5

<210> 62
<211> 9
<212> PRT
<213> Homo sapiens

<400> 62
Gly Ala Phe Asn Ser Ser Val Gly Asp
1 5

<210> 63
<211> 9
<212> PRT
<213> Homo sapiens

<400> 63
Ala Phe Asn Ser Ser Val Gly Asp Ser
1 5

<210> 64

<211> 9
<212> PRT
<213> Homo sapiens

<400> 64
Ser Val Gly Asp Ser Pro Ala Val Pro
 1   5

<210> 65
<211> 9
<212> PRT
<213> Homo sapiens

<400> 65
Tyr Leu Asn Glu Ser Ala Ser Thr Pro
 1   5

<210> 66
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Ser His Thr Phe Pro Val Val Asp Cys Thr Ala Ala Cys Cys Asp Leu
    50   55   60
Ser Ser Cys Asp Leu Ala Trp Trp Phe Glu Gly Arg Cys Tyr Leu Val
65   70   75   80
Ser Cys Pro His Lys Glu Asn Cys Glu Pro Lys Lys Met Gly Pro Ile
                85   90   95
Arg Ser Tyr Leu Thr Phe Val Leu Arg Pro Val Gln Arg Pro Ala Gln
            100   105   110
Leu Leu Asp Tyr Gly Asp Met Met Leu Asn Arg Gly Ser Pro Ser Gly
        115   120   125
Ile Trp Gly Asp Ser Pro Glu Asp Ile Arg Lys Asp Leu Pro Phe Leu
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Gly Lys Asp Trp Gly Leu Glu Glu Met Ser Glu Tyr Ser Asp Asp Tyr
145   150   155   160
Arg Glu Leu Glu Lys Asp Leu Leu Gln Pro Ser Gly Lys Gln Glu Pro
                165   170   175
Arg Gly Ser Ala Glu Tyr Thr Asp Trp Gly Leu Leu Pro Gly Ser Glu
            180   185   190
Gly Ala Phe Asn Ser Ser Val Gly Asp Ser Pro Ala Val Pro Ala Glu
        195   200   205
Thr Gln Gln Asp Pro Glu Leu His Tyr Leu Asn Glu Ser Ala Ser Thr
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Pro Ala Pro Lys Leu Pro Glu Arg Ser Val Leu Leu Pro Leu Pro Thr

225 230 235 240
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Gln Glu Gln Ser Ser Asn Ser Ser Gly Lys Glu Val Leu Met Pro Ser
260 265 270
His Ser Leu Pro Pro Ala Ser Leu Glu Leu Ser Ser Val Thr Val Glu
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Lys Ser Pro Val Leu Thr Val Thr Pro Gly Ser Thr Glu His Ser Ile
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Pro Thr Pro Pro Thr Ser Ala Ala Pro Ser Glu Ser Thr Pro Ser Glu
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595 600 605
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645 650 655
Phe Tyr His Trp Glu His Val Arg Gly Pro Ser Ala Val Glu Met Glu
660 665 670
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675 680 685
Tyr His Phe Arg Leu Thr Val Lys Asp Gln Gln Gly Leu Ser Ser Thr
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Thr Leu Asp Gly Ser Arg Ser Thr Asp Asp Gln Arg Ile Val Ser Tyr

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Val Tyr Thr Phe His Leu Arg Val Thr Asp Ser Gln Gly Ala Ser Asp
785                 790                 795                 800
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Arg Lys Asp Thr Leu Val Arg Gln Leu Ala Val Leu Leu Asn Val Leu
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Asp Ser Asp Ile Lys Val Gln Lys Ile Arg Ala His Ser Asp Leu Ser
    850                 855                 860
Thr Val Ile Val Phe Tyr Val Gln Ser Arg Pro Pro Phe Lys Val Leu
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Cys Leu Leu Lys Cys Ser Gly His Gly His Cys Asp Pro Leu Thr Lys
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Arg Cys Ile Cys Ser His Leu Trp Met Glu Asn Leu Ile Gln Arg Tyr
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Leu Arg Pro Lys Tyr Gly Ile Lys His Arg Ser Thr Glu His Asn Ser
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ataggggaca gcagcccaaa tgtaaagtca tcgggcgtaa tgaggaagaa gggagtgaac 5520
atttaccgct ttatgtacat aacatatgca gtttacatac tcatttgatc cttataatca 5580
accttgaaga ggagatacta tcattcttat gttgcagata gccctctgaa ggcccagaga 5640
ggttaagtaa cttcccagag gtcatggcca agaagtagtg gctccaagaa ctgaatgcaa 5700
atttttaaa ctgtagagtt ctgctttcca ctaaacaaag aactcctgcc ttgatggatg 5760
gagggcaaat tctggtggaa cttttgggcc acctgaaagt tctattccca ggactaagag 5820
gaatttcttt taatggatcc agagagccaa ggtcagaggg agagatggcc tgcatagtct 5880
cctgtggatc acacccgggc caccctccc tctaggttta cagtggactt cttctgcccc 5940
tcctcctttt ctgtccttgg ccatctcagc ctggcctctc tgatccttcc atcacagaag 6000
gatcttgaat ctctgggaaa tcaaacatca cagtagtgat cagaaagtga gtcctgtctt 6060
gtcaccccat ttctcatcag aacaaagcac gagatggaat gaccaaccag cattcttcat 6120
ggtggactgc ttatcattga ggatctttgg gagataaagc acgctaagag ctctggacag 6180
agaaaaacag gccctagaat atgggagtgg gtgtttgtag ggctcatagg ctaacaagca 6240
ctttagttgc tggtttacat tcaatgaagg aggattcata cccatggcat tacaaggcta 6300
agcatgtgta tgactaagga actatctgaa aaacatgcag caaggtaaga aaatgtacca 6360

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ctcaacaagc cagtgatgcc acctttttgtg cgcggggagg agagtgacta ccattgtttt 6420
ttgtgtgaca aagctatcat ggactatttt aatcttggtt ttattgctta aaatatatta 6480
tttttcccta tgtgttgaca aggtatttct aatatcacac tattaaatat atgcactaat 6540
ctaaataaag gtgtctgtat tttctgtaat gcttattttt agggggaaat ttgttttctt 6600
tatgcttcag ggtagaggga ttcccttgag tataggtcag caaactctgg cctgcagcct 6660
gtgtgtgcac gccccatgag ccgaaaagtg ggtcttatgt tttcaaatgg ttaaaaataa 6720
ataaaaaaat ttgaaacatg tgaactatat gacattcaga tttgtgttca taaataaagt 6780
tttattggaa catatcc                                                6797
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<210> 272
<211> 1063
<212> PRT
<213> Homo sapiens

<400> 272

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Met Thr Arg Leu Gly Trp Pro Ser Pro Cys Cys Ala Arg Lys Gln Cys
 1               5                  10                  15
Ser Glu Gly Arg Thr Tyr Ser Asn Ala Val Ile Ser Pro Asn Leu Glu
            20                  25                  30
Thr Thr Arg Ile Met Arg Val Ser His Thr Phe Pro Val Val Asp Cys
        35                  40                  45
Thr Ala Ala Cys Cys Asp Leu Ser Ser Cys Asp Leu Ala Trp Trp Phe
    50                  55                  60
Glu Gly Arg Cys Tyr Leu Val Ser Cys Pro His Lys Glu Asn Cys Glu
65                  70                  75                  80
Pro Lys Lys Met Gly Pro Ile Arg Ser Tyr Leu Thr Phe Val Leu Arg
                85                  90                  95
Pro Val Gln Arg Pro Ala Gln Leu Leu Asp Tyr Gly Asp Met Met Leu
            100                 105                 110
Asn Arg Gly Ser Pro Ser Gly Ile Trp Gly Asp Ser Pro Glu Asp Ile
        115                 120                 125
Arg Lys Asp Leu Pro Phe Leu Gly Lys Asp Trp Gly Leu Glu Glu Met
    130                 135                 140
Ser Glu Tyr Ser Asp Asp Tyr Arg Glu Leu Glu Lys Asp Leu Leu Gln
145                 150                 155                 160
Pro Ser Gly Lys Gln Glu Pro Arg Gly Ser Ala Glu Tyr Thr Asp Trp
                165                 170                 175
Gly Leu Leu Pro Gly Ser Glu Gly Ala Phe Asn Ser Ser Val Gly Asp
            180                 185                 190
Ser Pro Ala Val Pro Ala Glu Thr Gln Gln Asp Pro Glu Leu His Tyr
        195                 200                 205
Leu Asn Glu Ser Ala Ser Thr Pro Ala Pro Lys Leu Pro Glu Arg Ser
    210                 215                 220
Val Leu Leu Pro Leu Pro Thr Thr Pro Ser Ser Gly Glu Val Leu Glu
225                 230                 235                 240
Lys Glu Lys Ala Ser Gln Leu Gln Glu Gln Ser Ser Asn Ser Ser Gly
                245                 250                 255
Lys Glu Val Leu Met Pro Ser His Ser Leu Pro Pro Ala Ser Leu Glu
            260                 265                 270
Leu Ser Ser Val Thr Val Glu Lys Ser Pro Val Leu Thr Val Thr Pro
        275                 280                 285
Gly Ser Thr Glu His Ser Ile Pro Thr Pro Pro Thr Ser Ala Ala Pro
    290                 295                 300
Ser Glu Ser Thr Pro Ser Glu Leu Pro Ile Ser Pro Thr Thr Ala Pro
305                 310                 315                 320
Arg Thr Val Lys Glu Leu Thr Val Ser Ala Gly Asp Asn Leu Ile Ile
                325                 330                 335
Thr Leu Pro Asp Asn Glu Val Glu Leu Lys Ala Phe Val Ala Pro Ala
            340                 345                 350
Pro Pro Val Glu Thr Thr Tyr Asn Tyr Glu Trp Asn Leu Ile Ser His
        355                 360                 365
Pro Thr Asp Tyr Gln Gly Glu Ile Lys Gln Gly His Lys Gln Thr Leu
```

```
    370                 375                 380
Asn Leu Ser Gln Leu Ser Val Gly Leu Tyr Val Phe Lys Val Thr Val
385                 390                 395                 400
Ser Ser Glu Asn Ala Phe Gly Glu Gly Phe Val Asn Val Thr Val Lys
                405                 410                 415
Pro Ala Arg Arg Val Asn Leu Pro Pro Val Ala Val Val Ser Pro Gln
            420                 425                 430
Leu Gln Glu Leu Thr Leu Pro Leu Thr Ser Ala Leu Ile Asp Gly Ser
        435                 440                 445
Gln Ser Thr Asp Asp Thr Glu Ile Val Ser Tyr His Trp Glu Glu Ile
    450                 455                 460
Asn Gly Pro Phe Ile Glu Glu Lys Thr Ser Val Asp Ser Pro Val Leu
465                 470                 475                 480
Arg Leu Ser Asn Leu Asp Pro Gly Asn Tyr Ser Phe Arg Leu Thr Val
                485                 490                 495
Thr Asp Ser Asp Gly Ala Thr Asn Ser Thr Thr Ala Ala Leu Ile Val
            500                 505                 510
Asn Asn Ala Val Asp Tyr Pro Pro Val Ala Asn Ala Gly Pro Asn His
        515                 520                 525
Thr Ile Thr Leu Pro Gln Asn Ser Ile Thr Leu Asn Gly Asn Gln Ser
    530                 535                 540
Ser Asp Asp His Gln Ile Val Leu Tyr Glu Trp Ser Leu Gly Pro Gly
545                 550                 555                 560
Ser Glu Gly Lys His Val Val Met Gln Gly Val Gln Thr Pro Tyr Leu
                565                 570                 575
His Leu Ser Ala Met Gln Glu Gly Asp Tyr Thr Phe Gln Leu Lys Val
            580                 585                 590
Thr Asp Ser Ser Arg Gln Gln Ser Thr Ala Val Val Thr Val Ile Val
        595                 600                 605
Gln Pro Glu Asn Asn Arg Pro Pro Val Ala Val Ala Gly Pro Asp Lys
    610                 615                 620
Glu Leu Ile Phe Pro Val Glu Ser Ala Thr Leu Asp Gly Ser Ser Ser
625                 630                 635                 640
Ser Asp Asp His Gly Ile Val Phe Tyr His Trp Glu His Val Arg Gly
                645                 650                 655
Pro Ser Ala Val Glu Met Glu Asn Ile Asp Lys Ala Ile Ala Thr Val
            660                 665                 670
Thr Gly Leu Gln Val Gly Thr Tyr His Phe Arg Leu Thr Val Lys Asp
        675                 680                 685
Gln Gln Gly Leu Ser Ser Thr Ser Thr Leu Thr Val Ala Val Lys Lys
    690                 695                 700
Glu Asn Asn Ser Pro Pro Arg Ala Arg Ala Gly Gly Arg His Val Leu
705                 710                 715                 720
Val Leu Pro Asn Asn Ser Ile Thr Leu Asp Gly Ser Arg Ser Thr Asp
                725                 730                 735
Asp Gln Arg Ile Val Ser Tyr Leu Trp Ile Arg Asp Gly Gln Ser Pro
            740                 745                 750
Ala Ala Gly Asp Val Ile Asp Gly Ser Asp His Ser Val Ala Leu Gln
        755                 760                 765
Leu Thr Asn Leu Val Glu Gly Val Tyr Thr Phe His Leu Arg Val Thr
    770                 775                 780
Asp Ser Gln Gly Ala Ser Asp Thr Asp Thr Ala Thr Val Glu Val Gln
785                 790                 795                 800
Pro Asp Pro Arg Lys Ser Gly Leu Val Glu Leu Thr Leu Gln Val Gly
                805                 810                 815
Val Gly Gln Leu Thr Glu Gln Arg Lys Asp Thr Leu Val Arg Gln Leu
            820                 825                 830
Ala Val Leu Leu Asn Val Leu Asp Ser Asp Ile Lys Val Gln Lys Ile
        835                 840                 845
Arg Ala His Ser Asp Leu Ser Thr Val Ile Val Phe Tyr Val Gln Ser
    850                 855                 860
Arg Pro Pro Phe Lys Val Leu Lys Ala Ala Glu Val Ala Arg Asn Leu
865                 870                 875                 880
His Met Arg Leu Ser Lys Glu Lys Ala Asp Phe Leu Leu Phe Lys Val
```

885 890 895
Leu Arg Val Asp Thr Ala Gly Cys Leu Leu Lys Cys Ser Gly His Gly
900 905 910
His Cys Asp Pro Leu Thr Lys Arg Cys Ile Cys Ser His Leu Trp Met
915 920 925
Glu Asn Leu Ile Gln Arg Tyr Ile Trp Asp Gly Glu Ser Asn Cys Glu
930 935 940
Trp Ser Ile Phe Tyr Val Thr Val Leu Ala Phe Thr Leu Ile Val Leu
945 950 955 960
Thr Gly Gly Phe Thr Trp Leu Cys Ile Cys Cys Cys Lys Arg Gln Lys
965 970 975
Arg Thr Lys Ile Arg Lys Lys Thr Lys Tyr Thr Ile Leu Asp Asn Met
980 985 990
Asp Glu Gln Glu Arg Met Glu Leu Arg Pro Lys Tyr Gly Ile Lys His
995 1000 1005
Arg Ser Thr Glu His Asn Ser Ser Leu Met Val Ser Glu Ser Glu Phe
1010 1015 1020
Asp Ser Asp Gln Asp Thr Ile Phe Ser Arg Glu Lys Met Glu Arg Gly
1025 1030 1035 1040
Asn Pro Lys Val Ser Met Asn Gly Ser Ile Arg Asn Gly Ala Ser Phe
1045 1050 1055
Ser Tyr Cys Ser Lys Asp Arg
1060

<210> 273
<211> 1053
<212> PRT
<213> Homo sapiens

<400> 273
Cys Ala Arg Lys Gln Cys Ser Glu Gly Arg Thr Tyr Ser Asn Ala Val
1 5 10 15
Ile Ser Pro Asn Leu Glu Thr Thr Arg Ile Met Arg Val Ser His Thr
20 25 30
Phe Pro Val Val Asp Cys Thr Ala Ala Cys Cys Asp Leu Ser Ser Cys
35 40 45
Asp Leu Ala Trp Trp Phe Glu Gly Arg Cys Tyr Leu Val Ser Cys Pro
50 55 60
His Lys Glu Asn Cys Glu Pro Lys Lys Met Gly Pro Ile Arg Ser Tyr
65 70 75 80
Leu Thr Phe Val Leu Arg Pro Val Gln Arg Pro Ala Gln Leu Leu Asp
85 90 95
Tyr Gly Asp Met Met Leu Asn Arg Gly Ser Pro Ser Gly Ile Trp Gly
100 105 110
Asp Ser Pro Glu Asp Ile Arg Lys Asp Leu Pro Phe Leu Gly Lys Asp
115 120 125
Trp Gly Leu Glu Glu Met Ser Glu Tyr Ser Asp Asp Tyr Arg Glu Leu
130 135 140
Glu Lys Asp Leu Leu Gln Pro Ser Gly Lys Gln Glu Pro Arg Gly Ser
145 150 155 160
Ala Glu Tyr Thr Asp Trp Gly Leu Leu Pro Gly Ser Glu Gly Ala Phe
165 170 175
Asn Ser Ser Val Gly Asp Ser Pro Ala Val Pro Ala Glu Thr Gln Gln
180 185 190
Asp Pro Glu Leu His Tyr Leu Asn Glu Ser Ala Ser Thr Pro Ala Pro
195 200 205
Lys Leu Pro Glu Arg Ser Val Leu Leu Pro Leu Pro Thr Thr Pro Ser
210 215 220
Ser Gly Glu Val Leu Glu Lys Glu Lys Ala Ser Gln Leu Gln Glu Gln
225 230 235 240
Ser Ser Asn Ser Ser Gly Lys Glu Val Leu Met Pro Ser His Ser Leu
245 250 255
Pro Pro Ala Ser Leu Glu Leu Ser Ser Val Thr Val Glu Lys Ser Pro

```
            260                 265                 270
Val Leu Thr Val Thr Pro Gly Ser Thr Glu His Ser Ile Pro Thr Pro
        275                 280                 285
Pro Thr Ser Ala Ala Pro Ser Glu Ser Thr Pro Ser Glu Leu Pro Ile
    290                 295                 300
Ser Pro Thr Thr Ala Pro Arg Thr Val Lys Glu Leu Thr Val Ser Ala
305                 310                 315                 320
Gly Asp Asn Leu Ile Ile Thr Leu Pro Asp Asn Glu Val Glu Leu Lys
                325                 330                 335
Ala Phe Val Ala Pro Ala Pro Pro Val Glu Thr Thr Tyr Asn Tyr Glu
            340                 345                 350
Trp Asn Leu Ile Ser His Pro Thr Asp Tyr Gln Gly Glu Ile Lys Gln
        355                 360                 365
Gly His Lys Gln Thr Leu Asn Leu Ser Gln Leu Ser Val Gly Leu Tyr
    370                 375                 380
Val Phe Lys Val Thr Val Ser Ser Glu Asn Ala Phe Gly Glu Gly Phe
385                 390                 395                 400
Val Asn Val Thr Val Lys Pro Ala Arg Arg Val Asn Leu Pro Pro Val
                405                 410                 415
Ala Val Val Ser Pro Gln Leu Gln Glu Leu Thr Leu Pro Leu Thr Ser
            420                 425                 430
Ala Leu Ile Asp Gly Ser Gln Ser Thr Asp Asp Thr Glu Ile Val Ser
        435                 440                 445
Tyr His Trp Glu Glu Ile Asn Gly Pro Phe Ile Glu Glu Lys Thr Ser
    450                 455                 460
Val Asp Ser Pro Val Leu Arg Leu Ser Asn Leu Asp Pro Gly Asn Tyr
465                 470                 475                 480
Ser Phe Arg Leu Thr Val Thr Asp Ser Asp Gly Ala Thr Asn Ser Thr
                485                 490                 495
Thr Ala Ala Leu Ile Val Asn Asn Ala Val Asp Tyr Pro Pro Val Ala
            500                 505                 510
Asn Ala Gly Pro Asn His Thr Ile Thr Leu Pro Gln Asn Ser Ile Thr
        515                 520                 525
Leu Asn Gly Asn Gln Ser Ser Asp Asp His Gln Ile Val Leu Tyr Glu
    530                 535                 540
Trp Ser Leu Gly Pro Gly Ser Glu Gly Lys His Val Val Met Gln Gly
545                 550                 555                 560
Val Gln Thr Pro Tyr Leu His Leu Ser Ala Met Gln Glu Gly Asp Tyr
                565                 570                 575
Thr Phe Gln Leu Lys Val Thr Asp Ser Ser Arg Gln Gln Ser Thr Ala
            580                 585                 590
Val Val Thr Val Ile Val Gln Pro Glu Asn Asn Arg Pro Pro Val Ala
        595                 600                 605
Val Ala Gly Pro Asp Lys Glu Leu Ile Phe Pro Val Glu Ser Ala Thr
    610                 615                 620
Leu Asp Gly Ser Ser Ser Ser Asp Asp His Gly Ile Val Phe Tyr His
625                 630                 635                 640
Trp Glu His Val Arg Gly Pro Ser Ala Val Glu Met Glu Asn Ile Asp
                645                 650                 655
Lys Ala Ile Ala Thr Val Thr Gly Leu Gln Val Gly Thr Tyr His Phe
            660                 665                 670
Arg Leu Thr Val Lys Asp Gln Gln Gly Leu Ser Ser Thr Ser Thr Leu
        675                 680                 685
Thr Val Ala Val Lys Lys Glu Asn Asn Ser Pro Pro Arg Ala Arg Ala
    690                 695                 700
Gly Gly Arg His Val Leu Val Leu Pro Asn Asn Ser Ile Thr Leu Asp
705                 710                 715                 720
Gly Ser Arg Ser Thr Asp Asp Gln Arg Ile Val Ser Tyr Leu Trp Ile
                725                 730                 735
Arg Asp Gly Gln Ser Pro Ala Ala Gly Asp Val Ile Asp Gly Ser Asp
            740                 745                 750
His Ser Val Ala Leu Gln Leu Thr Asn Leu Val Glu Gly Val Tyr Thr
        755                 760                 765
Phe His Leu Arg Val Thr Asp Ser Gln Gly Ala Ser Asp Thr Asp Thr
```

```
    770                 775                 780
Ala Thr Val Glu Val Gln Pro Asp Pro Arg Lys Ser Gly Leu Val Glu
785                 790                 795                 800
Leu Thr Leu Gln Val Gly Val Gly Gln Leu Thr Glu Gln Arg Lys Asp
                805                 810                 815
Thr Leu Val Arg Gln Leu Ala Val Leu Leu Asn Val Leu Asp Ser Asp
            820                 825                 830
Ile Lys Val Gln Lys Ile Arg Ala His Ser Asp Leu Ser Thr Val Ile
        835                 840                 845
Val Phe Tyr Val Gln Ser Arg Pro Pro Phe Lys Val Leu Lys Ala Ala
    850                 855                 860
Glu Val Ala Arg Asn Leu His Met Arg Leu Ser Lys Glu Lys Ala Asp
865                 870                 875                 880
Phe Leu Leu Phe Lys Val Leu Arg Val Asp Thr Ala Gly Cys Leu Leu
                885                 890                 895
Lys Cys Ser Gly His Gly His Cys Asp Pro Leu Thr Lys Arg Cys Ile
            900                 905                 910
Cys Ser His Leu Trp Met Glu Asn Leu Ile Gln Arg Tyr Ile Trp Asp
        915                 920                 925
Gly Glu Ser Asn Cys Glu Trp Ser Ile Phe Tyr Val Thr Val Leu Ala
    930                 935                 940
Phe Thr Leu Ile Val Leu Thr Gly Gly Phe Thr Trp Leu Cys Ile Cys
945                 950                 955                 960
Cys Cys Lys Arg Gln Lys Arg Thr Lys Ile Arg Lys Lys Thr Lys Tyr
                965                 970                 975
Thr Ile Leu Asp Asn Met Asp Glu Gln Glu Arg Met Glu Leu Arg Pro
            980                 985                 990
Lys Tyr Gly Ile Lys His Arg Ser Thr Glu His Asn Ser Ser Leu Met
        995                 1000                1005
Val Ser Glu Ser Glu Phe Asp Ser Asp Gln Asp Thr Ile Phe Ser Arg
    1010                1015                1020
Glu Lys Met Glu Arg Gly Asn Pro Lys Val Ser Met Asn Gly Ser Ile
1025                1030                1035                1040
Arg Asn Gly Ala Ser Phe Ser Tyr Cys Ser Lys Asp Arg
                1045                1050


<210> 274
<211> 1053
<212> PRT
<213> Homo sapiens

<400> 274
Cys Ala Arg Lys Gln Cys Ser Glu Gly Arg Thr Tyr Ser Asn Ala Val
 1                5                  10                  15
Ile Ser Pro Asn Leu Glu Thr Thr Arg Ile Met Arg Val Ser His Thr
            20                  25                  30
Phe Pro Val Val Asp Cys Thr Ala Ala Cys Cys Asp Leu Ser Ser Cys
        35                  40                  45
Asp Leu Ala Trp Trp Phe Glu Gly Arg Cys Tyr Leu Val Ser Cys Pro
    50                  55                  60
His Lys Glu Asn Cys Glu Pro Lys Lys Met Gly Pro Ile Arg Ser Tyr
65                  70                  75                  80
Leu Thr Phe Val Leu Arg Pro Val Gln Arg Pro Ala Gln Leu Leu Asp
                85                  90                  95
Tyr Gly Asp Met Met Leu Asn Arg Gly Ser Pro Ser Gly Ile Trp Gly
            100                 105                 110
Asp Ser Pro Glu Asp Ile Arg Lys Asp Leu Pro Phe Leu Gly Lys Asp
        115                 120                 125
Trp Gly Leu Glu Glu Met Ser Glu Tyr Ser Asp Asp Tyr Arg Glu Leu
    130                 135                 140
Glu Lys Asp Leu Leu Gln Pro Ser Gly Lys Gln Glu Pro Arg Gly Ser
145                 150                 155                 160
Ala Glu Tyr Thr Asp Trp Gly Leu Leu Pro Gly Ser Glu Gly Ala Phe
```

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                 165                 170                 175
Asn Ser Ser Val Gly Asp Ser Pro Ala Val Pro Ala Glu Thr Gln Gln
            180                 185                 190
Asp Pro Glu Leu His Tyr Leu Asn Glu Ser Ala Ser Thr Pro Ala Pro
        195                 200                 205
Lys Leu Pro Glu Arg Ser Val Leu Leu Pro Leu Pro Thr Thr Pro Ser
    210                 215                 220
Ser Gly Glu Val Leu Glu Lys Glu Lys Ala Ser Gln Leu Gln Glu Gln
225                 230                 235                 240
Ser Ser Asn Ser Ser Gly Lys Glu Val Leu Met Pro Ser His Ser Leu
                245                 250                 255
Pro Pro Ala Ser Leu Glu Leu Ser Ser Val Thr Val Glu Lys Ser Pro
            260                 265                 270
Val Leu Thr Val Thr Pro Gly Ser Thr Glu His Ser Ile Pro Thr Pro
        275                 280                 285
Pro Thr Ser Ala Ala Pro Ser Glu Ser Thr Pro Ser Glu Leu Pro Ile
    290                 295                 300
Ser Pro Thr Thr Ala Pro Arg Thr Val Lys Glu Leu Thr Val Ser Ala
305                 310                 315                 320
Gly Asp Asn Leu Ile Ile Thr Leu Pro Asp Asn Glu Val Glu Leu Lys
                325                 330                 335
Ala Phe Val Ala Pro Ala Pro Pro Val Glu Thr Thr Tyr Asn Tyr Glu
            340                 345                 350
Trp Asn Leu Ile Ser His Pro Thr Asp Tyr Gln Gly Glu Ile Lys Gln
        355                 360                 365
Gly His Lys Gln Thr Leu Asn Leu Ser Gln Leu Ser Val Gly Leu Tyr
    370                 375                 380
Val Phe Lys Val Thr Val Ser Ser Glu Asn Ala Phe Gly Glu Gly Phe
385                 390                 395                 400
Val Asn Val Thr Val Lys Pro Ala Arg Arg Val Asn Leu Pro Pro Val
                405                 410                 415
Ala Val Val Ser Pro Gln Leu Gln Glu Leu Thr Leu Pro Leu Thr Ser
            420                 425                 430
Ala Leu Ile Asp Gly Ser Gln Ser Thr Asp Asp Thr Glu Ile Val Ser
        435                 440                 445
Tyr His Trp Glu Glu Ile Asn Gly Pro Phe Ile Glu Glu Lys Thr Ser
    450                 455                 460
Val Asp Ser Pro Val Leu Arg Leu Ser Asn Leu Asp Pro Gly Asn Tyr
465                 470                 475                 480
Ser Phe Arg Leu Thr Val Thr Asp Ser Asp Gly Ala Thr Asn Ser Thr
                485                 490                 495
Thr Ala Ala Leu Ile Val Asn Asn Ala Val Asp Tyr Pro Pro Val Ala
            500                 505                 510
Asn Ala Gly Pro Asn His Thr Ile Thr Leu Pro Gln Asn Ser Ile Thr
        515                 520                 525
Leu Asn Gly Asn Gln Ser Ser Asp Asp His Gln Ile Val Leu Tyr Glu
    530                 535                 540
Trp Ser Leu Gly Pro Gly Ser Glu Gly Lys His Val Val Met Gln Gly
545                 550                 555                 560
Val Gln Thr Pro Tyr Leu His Leu Ser Ala Met Gln Glu Gly Asp Tyr
                565                 570                 575
Thr Phe Gln Leu Lys Val Thr Asp Ser Ser Arg Gln Gln Ser Thr Ala
            580                 585                 590
Val Val Thr Val Ile Val Gln Pro Glu Asn Asn Arg Pro Pro Val Ala
        595                 600                 605
Val Ala Gly Pro Asp Lys Glu Leu Ile Phe Pro Val Glu Ser Ala Thr
    610                 615                 620
Leu Asp Gly Ser Ser Ser Ser Asp Asp His Gly Ile Val Phe Tyr His
625                 630                 635                 640
Trp Glu His Val Arg Gly Pro Ser Ala Val Glu Met Glu Asn Ile Asp
                645                 650                 655
Lys Ala Ile Ala Thr Val Thr Gly Leu Gln Val Gly Thr Tyr His Phe
            660                 665                 670
Arg Leu Thr Val Lys Asp Gln Gln Gly Leu Ser Ser Thr Ser Thr Leu
```

```
        675                 680                 685
Thr Val Ala Val Lys Lys Glu Asn Asn Ser Pro Pro Arg Ala Arg Ala
    690                 695                 700
Gly Gly Arg His Val Leu Val Leu Pro Asn Asn Ser Ile Thr Leu Asp
705                 710                 715                 720
Gly Ser Arg Ser Thr Asp Asp Gln Arg Ile Val Ser Tyr Leu Trp Ile
                725                 730                 735
Arg Asp Gly Gln Ser Pro Ala Ala Gly Asp Val Ile Asp Gly Ser Asp
            740                 745                 750
His Ser Val Ala Leu Gln Leu Thr Asn Leu Val Glu Gly Val Tyr Thr
        755                 760                 765
Phe His Leu Arg Val Thr Asp Ser Gln Gly Ala Ser Asp Thr Asp Thr
    770                 775                 780
Ala Thr Val Glu Val Gln Pro Asp Pro Arg Lys Ser Gly Leu Val Glu
785                 790                 795                 800
Leu Thr Leu Gln Val Gly Val Gly Gln Leu Thr Glu Gln Arg Lys Asp
                805                 810                 815
Thr Leu Val Arg Gln Leu Ala Val Leu Leu Asn Val Leu Asp Ser Asp
            820                 825                 830
Ile Lys Val Gln Lys Ile Arg Ala His Ser Asp Leu Ser Thr Val Ile
        835                 840                 845
Val Phe Tyr Val Gln Ser Arg Pro Pro Phe Lys Val Leu Lys Ala Ala
    850                 855                 860
Glu Val Ala Arg Asn Leu His Met Arg Leu Ser Lys Glu Lys Ala Asp
865                 870                 875                 880
Phe Leu Leu Phe Lys Val Leu Arg Val Asp Thr Ala Gly Cys Leu Leu
                885                 890                 895
Lys Cys Ser Gly His Gly His Cys Asp Pro Leu Thr Lys Arg Cys Ile
            900                 905                 910
Cys Ser His Leu Trp Met Glu Asn Leu Ile Gln Arg Tyr Ile Trp Asp
        915                 920                 925
Gly Glu Ser Asn Cys Glu Trp Ser Ile Phe Tyr Val Thr Val Leu Ala
    930                 935                 940
Phe Thr Leu Ile Val Leu Thr Gly Gly Phe Thr Trp Leu Cys Ile Cys
945                 950                 955                 960
Cys Cys Lys Arg Gln Lys Arg Thr Lys Ile Arg Lys Lys Thr Lys Tyr
                965                 970                 975
Thr Ile Leu Asp Asn Met Asp Glu Gln Glu Arg Met Glu Leu Arg Pro
            980                 985                 990
Lys Tyr Gly Ile Lys His Arg Ser Thr Glu His Asn Ser Ser Leu Met
        995                 1000                1005
Val Ser Glu Ser Glu Phe Asp Ser Asp Gln Asp Thr Ile Phe Ser Arg
    1010                1015                1020
Glu Lys Met Glu Arg Gly Asn Pro Lys Val Ser Met Asn Gly Ser Ile
1025                1030                1035                1040
Arg Asn Gly Ala Ser Phe Ser Tyr Cys Ser Lys Asp Arg
                1045                1050
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<210> 275
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 275
aattctccga acgtgtcacg ttt 23

<210> 276
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 276
aagggacgaa gacgaacacu uctt 24

<210> 277
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 277
aactgaagac ctgaagacaa taa 23